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THE OPHTHALMIC RECORD

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EDITED BY

CASEY A. WOOD, M. D.
Chicago
G. C. SAVAGE, M. D.
Nashville
GEO. E. DE SCHWEINITZ, M.D.
Philadelphia
JOHN E. WEEKS, M. D.
New York
F. C. HOTZ, M. D.
Chicago
H. V. WÜRDEMANN, M. D.
Milwaukee
W. E. HOPKINS, M. D.
San Francisco
HAROLD GIFFORD, M. D.
Omaha

T. A. WOODRUFF, M. D.
EDITORIAL SECRETARY,
1102 RELIANCE BUILDING, CHICAGO, ILLS.

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The April number of the Ophthalmic Record will contain a report of the proceedings of the Western Ophthalmologic and Oto-Laryngologic Association. An original article by R. Denig, M.D., on Histology and Etiology of Posterior Lenticonus; one by Alexander Duane, M.D., Angio-Neurotic Edema of the Conjunctiva; one by Robert L. Randolph, M.D., Diabetic Cataract, with report of five operations ; one by H. Gifford, M.D., Pulsating Exophthalmos, from Aneurismal Varix of the Neck. There will also appear reviews of the most recent contributions to Ophthalmology, editorials, society reports, and miscellaneous items of interest.

The Record particularly desires short practical papers on any subject connected with Ophthalmology. These will be published at as early a date as possible. It is understood that, unless otherwise arranged, original articles when accepted are contributed to the Record exclusively. Illustrative cuts will be made at the expense of the journal, and proofs for correction will be sent to authors when desired. Reprints with covers are furnished at cost. One hundred of these will be presented to authors *gratis* when a request for them is written on the original manuscript. The Record will be issued monthly, and each number will contain about 54 pages of reading matter.

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T. A. WOODRUFF, M.D., Editorial Secretary,
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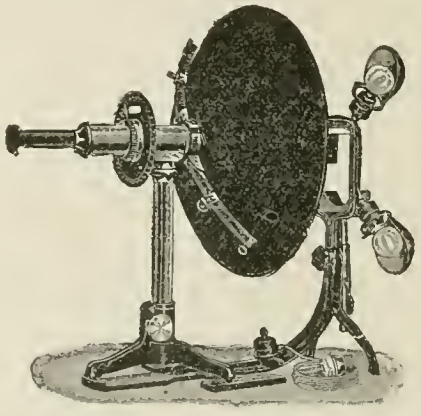

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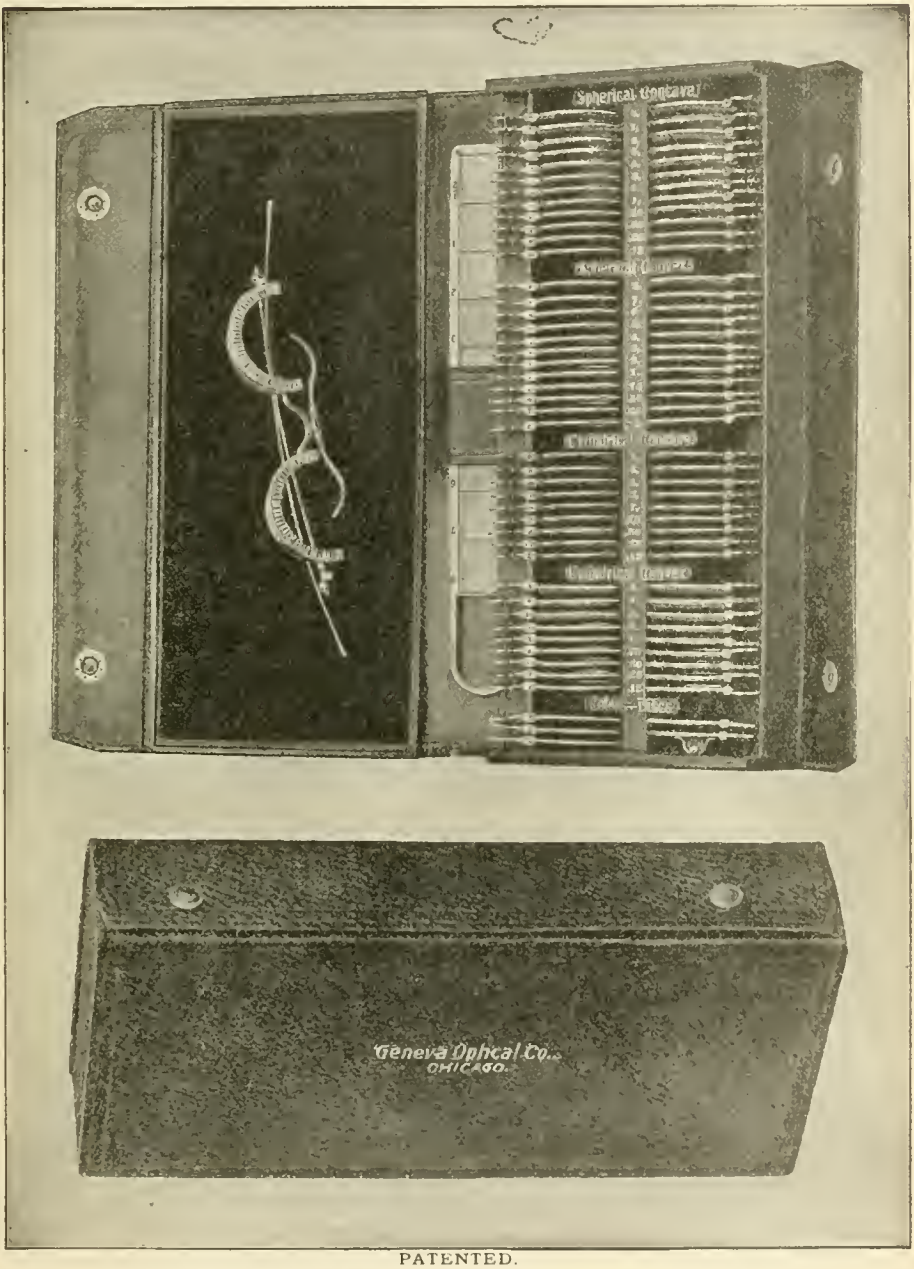

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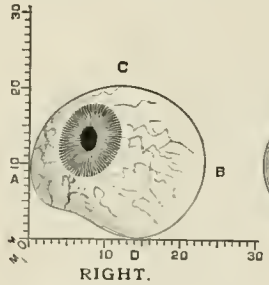

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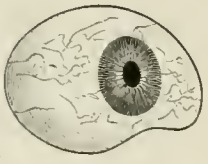

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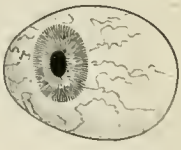

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THE

OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME VIII. CHICAGO, MARCH, 1899. NO. 3. NEW SERIES

ORIGINAL ARTICLES.

SOME EXPERIMENTS WITH THE GIANT MAGNET.*

BY HAMILTON STILLSON, M.D.

SEATTLE, WASHINGTON.

Illustrated.

The writer had hoped to include in this paper the report of some experiments on the influence of the force of magnetism upon the composition of photographic plates. The series of experiments in that line are not yet completed. The report of them will have to be deferred. Enough has been accomplished, however, to induce us to hope that with a suitable plate, a suitable magnet and a suitable object results can be obtained from magnetism which will compare somewhat favorably and will resemble somewhat the effects of the X-Ray in producing shadowgraphs upon photographic plates; and the writer mentions his uncompleted experiments at this time only in the hope of stimulating others to experimentations on this subject.

Many other perhaps more practical and certainly more easily conducted experiments also need to be made with the giant magnet, for instance, determining the proper manner of manipulating the magnet in the extraction of paramagnetic foreign bodies from the interior of the eye. For, as a matter of fact, results from the use of the small hand magnet and results from the use of the giant magnet have until to-day been far from a realization of the reasonable hopes entertained by oculists possessing such magnets. Surely every one who has had experience in the use

*Read before Western Ophthalmologic and Oto-Laryngologic Association, New Orleans, February, 1899.

of the giant magnet has been surprised at the often untoward reaction following its use.

From the series of experiments whose detailed account would unnecessarily burden this paper, and from observations on the behavior of the magnet and the attracted foreign body in actual office operation the writer would make the following conclusions:

1st. The field of magnetization extending from the tip of the magnet, and appreciated by the vibration of a small magnetic needle, is about ten meters, varying of course with variations of the current.

2nd. The actual working distance is usually contact of the eye with the magnet.

3rd. With the eye at a distance of five millimeters from the tip of the magnet, and with six or eight amperes of current, the magnetic force will be about 130 gm.: multiplying the distance by three divides the force by seven.

4th. Dividing the weight of the object by two divides the attraction by six if the object be iron, and by about four if the object be steel.

5th. A paramagnetic body, as iron or steel, becomes a magnet upon being attracted by a magnet and assumes opposite poles. Not only should the shape of the foreign body be recognized as fully as possible before operation, but the operator should determine what position he would prefer it to be in for extraction and which end he would desire to come foremost.

6th. Usually the best line of force to use is the line that radiates from the tip of the magnet. In Fig. 1 the directions of the lines of force from the magnet are indicated by knitting needles which have been attracted into the positions represented in the figure. The central line of force should be applied to the long diameter of the foreign body, if possible, in such a way as to place the foreign body in the position most favorable for extraction.

7th. The management of the foreign body will depend more upon its shape than is generally believed. If the object be disc-like it should be made to saw its way with the edge forward; if it be pyramidal the point should be extracted first.

8th. To accomplish this purpose the eye and the magnet should be relatively in position and still before the current is turned on. It is a mistake to place the patient at a distance and cause him to approach the magnet gradually.

9th. A rheostat should generally be used with the current, especially if the body be large. Only a very slight current should be attempted at

first or until the piece of steel is made to assume a position easy for its accouchement. The placing of the foreign body, it may be said again, in proper position for making its exit is of as much importance as is the proper presentation of the infant at parturition.

10th. Knapp says that foreign bodies in the vitreous are arranged by preference in the lower part of the vitreous, but experiments tend to show that this will depend upon the size and shape of the foreign body, the length of time it has been in the vitreous, and the character of the vitreous. For instance, blood in the vitreous will well up and float the foreign body towards the point of exit of the blood. This will be especially the case if the piece be small (less than 0.02 gm.). Then, too, if the piece be small and the vitreous somewhat fluid, the foreign body, if given time, may sink. The vitreous humors of different eyes differ greatly as to their liquidity. If the vitreous be not especially fluid, a small piece may float where it first lodged.

11th. Small pieces with great difficulty penetrate so far as the vitreous; a piece weighing less than 0.02 gm. will often stop in the cornea or sclera. Great force is required to cause such a piece to pass on through the lens or through the sclera. They will often be caught in the iris (especially if the iris is somewhat distant from the lens. They seem to be caught by the iris as a falling acrobat is caught by his net or the fish is caught by the seine.

In two of my cases in practice the large pieces had passed on through the lens into the vitreous, while the small pieces were caught in the iris (sifted out by the iris), where they remained.

12th. Small pieces that are behind the iris are difficult to remove by means of the giant magnet. Under its attraction the foreign body will cause the iris to bulge up, or be dragged one way or the other, but they will not cut their way through the iris. This attempt at their removal will not only fail, but the effort at removal will do great violence to the iris. A preliminary iridectomy, or at least iridotomy, should be performed; then a small hand magnet (the Hirschberg or other form) should be used in preference. This rule will apply also to small pieces under the conjunctiva. A small piece can be made to excavate its way around under the conjunctiva without making its exit, the conjunctiva in the meantime being bulged up into a wavy cone. (An attempt has been made in Fig. 2 to show this lifting up of the conjunctiva when a small piece of steel under it is attracted by the magnet.) The tip of the Hirschberg magnet inserted through a slit in the conjunctiva is preferable to the giant magnet in such cases. Snipping the foreign body out with forceps

and scissors in such a case, or touching the foreign body with a small cautery point and letting the foreign body come out on the eschar, are equally successful ways of disposing of small pieces under the conjunctiva.

13th. Large pieces may be made to perforate the iris or conjunctiva if they have a suitable shape and are managed properly.

14th. Large pieces should have the current turned on slowly, and time should be given them not only to find their point of least resistance and place themselves in proper position to avail themselves of it, but to cut their way. Fifteen or twenty minutes' application of the magnet may sometimes be necessary. Pieces weighing in the neighborhood of 2 cg. may be made to swim about in the vitreous in any desired direction.

15th. Haab extracts foreign bodies from the vitreous by placing the point of the magnet at the sclero-corneal junction and causing the foreign body to roll around the edge of the lens and so on into position behind the iris, where the foreign body is made to tear its way through the iris or made to come through a preparative opening in the iris. Small pieces may perhaps be best extracted in that manner, but large pieces almost invariably do damage to the edge of the lens and to the iris. A better plan with large pieces, especially with those that have entered through the sclera without injuring the lens, is, after definitely locating them and arranging them in proper position for extraction, to make a hole in the sclera nearest to where they lie if convenient and extract them through the opening.

16th. The best way for opening the sclera will often be with the galvano-cautery. It is less painful and seems to be less liable to sepsis. The slightly prolonged drainage afforded by it is often necessary for success.

17th. If the operator is in doubt as to whether the size and shape and location of the foreign body render it suitable of extraction from the vitreous around the edge of the lens and through the iris, and he wishes to make a tentative trial of the magnet, instead of applying the tip of the magnet to the sclero-corneal junction as recommended by Haab, a good plan is to remove the tip of the magnet and insert the eye into the opening at the end of the magnet as far as the sclero-corneal junction, applying the current slowly. Removing the eye from the magnet for repeated examination will enable the operator to determine what part of the ciliary region the foreign body will approach.

18th. It is not always best to endeavor to remove the foreign body from the opening it has made in its entrance. Of course a foreign body

that has passed through the cornea and iris and lens and remains in the back part of the vitreous would not be removed through the cornea. A ragged piece that has entered through the upper part of the sclera or ciliary body, but which lies in the lower, anterior part of the vitreous, is often best removed through a cautery puncture in the lower part of the sclera.

19th. The giant magnet forms a good means of determining whether the foreign body be free in the vitreous or not. If the attraction of the foreign body causes much pain the foreign body may be judged to be attached to the choroid and sclera. Yet the giant magnet should seldom, if ever, be used for such purposes of diagnosis. Such haphazard application of the force is almost certain to displace the foreign body disadvantageously.

20th. The writer is not experienced in the use of the sideroscope, but from the recent reports concerning it it doubtless is far inferior to the modern improved X-Ray appliances in determining the size, shape and location of a foreign body. In the writer's experience, however, fully half of the foreign bodies can be pretty definitely estimated by the ordinary means—ophthalmoscope, transillumination, etc.

21st. The question of anæsthetics is one that must be settled by circumstances; that is to say, by the character of the patient and the conditions of the case. Blacksmiths, iron molders, saw filers and others accustomed to getting pieces of iron or steel into the eye, can usually be relied upon to bear the pain and to place the eye in suitable position for the operation without an anæsthetic. Wood-choppers usually are not so tractable. In this wooded country where steel wedges and steel sledges are almost universally used in splitting logs, wood-choppers furnish a large quota of cases. Their eyes are seldom struck, but when struck are injured badly. Large, sharp, jagged pieces from the edge of the hammer rebound from the wedge into the eye, where, in many instances, they pass entirely through the eyeball and lodge in the bone behind. Many of the cases of foreign bodies in the eyes of wood-choppers require general anæsthesia. If the foreign body is easily seen and promises to be easy of extraction cocaine anæsthesia will be sufficient. In some instances the writer has, without apparent detriment, fortified the cocaine with the use of the suprarenal gland extract. Where general anæsthesia is necessary it should be profound, for the operator should have absolute control of the position of the eye for a sufficient length of time.

TWO CASES OF CONGENITAL OPACITY OF THE CORNEA.

BY F. G. MURPHY, M.D.
KANSAS CITY, MO.

Illustrated.

Four years ago Master, F. W., three years of age, with corneal opacities of the corneæ, came to my office for treatment. At that time the irides and pupils were scarcely visible behind the densely opaque corneæ. The mother informed me that the opacities were not so dense then as they were at birth, and that until the child was several weeks old the corneæ were as white as the sclerotics. The child received no treatment before coming to my office, and as the corneæ had cleared so much in three years, the mother was advised that the eyes would take care of themselves and no treatment was suggested. The child is now seven years of age, and the corneæ have become quite transparent and vision is about 20/70 in each eye. Fig. 1 is from a photograph taken a few weeks ago, in which the pupils and corneæ are plainly visible, which is quite a contrast to the condition of the eyes four years ago.

The appearance of the left eye in the photograph is that of a central corneal opacity, which is only a reflection of light on the partially opaque corneæ. The opacities have the ground-glass appearance and are evenly distributed. The child is bright, can read figures and letters when not too small, but can not see well enough to attend the public schools. However, he plays with other small boys in the streets and goes alone around the city.

The second patient is shown, at one year of age, in fig. 2, and at three years of age in fig. 3. The latter was taken in October, 1898.

This little patient was not so fortunate as the first, and fell into the hands of an itinerant physician.

The writer was called in consultation with the family physician when the child was about a week old, and no difference was discernable in the character of the opacity from that of the first child, except that the corneæ in the second patient was not so opaque immediately after birth. The corneæ, however, began to clear rapidly within a few weeks, and is now normally transparent. Had the eyes been left alone in other respects the child would have, undoubtedly, had good sight. This "trav-

FIG. 1.

FIG. 2.

FIG. 3.

eling oculist" insisted that the lens was also opaque (he could see through the densely opaque corneæ), and performed discission on both eyes, beginning the operations when the child was fourteen days old, and followed by instillations of eserine.

Iritis closed both pupils firmly, and the complete anterior surface of the irides became adherent to the corneæ. The left eye has atrophied considerably, but the right eye retained its normal size. The writer was asked two years ago to see the little patient with Dr. Schneider, of Milwaukee. An iridectomy was performed at that time and an anterior chamber established. A more extensive iridectomy, to be performed some time in the future, may result in fairly good vision. My experience with these two cases has quite impressed me with the belief that congenital opacities of the corneæ due to arrest of development improves sufficiently well to justify their being left alone. The treatment should be of a stimulating character.

A SERIES OF CASES OF MALARIAL KERATITIS WITH A REPORT OF THE BLOOD EXAMINATIONS.*

BY E. C. ELLETT, M.D.

MEMPHIS, TENN.

Formerly House Surgeon in Wills' Eye Hospital, Philadelphia; Ophthalmic and Aural Surgeon to St. Joseph's Hospital, The Children's Home, The Lucy Brinkley Hospital, the City Hospital and the Shelby County Poor and Insane Asylum, Memphis.

A distinct form of inflammation of the cornea due to malaria, and known therefore as malarial keratitis, is now recognized, thanks to the efforts of Dr. Chas. Kipp of Newark, N. J., who reported a series of these cases to the *American Ophthalmological Society* in 1880, grouping them together on account of their presenting similar appearances and running similar courses, and calling them malarial because he found all the patients had or recently had had that disease.

Previous to this date a report had been made by Horner in 1871 on a vesicular inflammation of the cornea occurring in connection with very many general diseases and associated with herpes facialis, and hence called Herpes Frebilis Corneæ. In 1880, the same year that Kipp's first contribution was published, two others on the same subject appeared, one by Mlle. Kendall, a pupil of Horner, and one by Godo, the latter finding malaria to be present in one-third of the cases. In 1884 Hansen-Grut presented to the *Eighth International Medical Congress* a study of what

*Read before the Western Ophthalmologic and Oto-Laryngologic Association, New Orleans, February, 1899.

he called Dendritic Keratitis, and since he does not mention Kipp's work he was probably not familiar with it, nor was Emmert, who the following year, independently both of Kipp's and Hansen-Grut's reports, published a contribution to what was probably the same disease under the name of Keratitis Exulcerans Dendritica Mycotica, a name which covers all contingencies. A second paper by Kipp in 1890, and one by Wilder of Chicago in 1893 about complete the American contributions to the subject. Now it is more than likely that all of these descriptions apply to one disease, which is probably subject to slight variations under different circumstances, except that I am inclined to think that the observation as to the occurrence of vesicles is a mistake, and that the eruption is always papular at first instead of vesicular. The condition has undoubtedly been observed in other diseases than malaria (in one of mine it is said to have followed yellow fever), but as practically all of these cases which I have seen seemed to be dependent on the presence of a malarial infection as verified by the blood examination, and have presented uniform clinical features, I believe they properly belong to the category of malarial keratitis as described by Kipp, and which I believe is a characteristic form of corneal disease; so much so that I am of the opinion that a diagnosis in these cases can generally be made with accuracy without the blood examination. As malaria is the most common of diseases in the locality in which I practice, it may be more or less accidental that I have personally seen this form of keratitis in connection with it alone; but in reply to that I would say that I would at least occasionally see it complicating some other infection, with all of which we are provided, and especially La grippe, which has prevailed with us in a severe form since January first, if it did not have a predilection for the victims of malaria. Such has not been the case, as the histories of my patients will show.

For the past few months all of these cases which have come under my observation have been turned over to a competent hematologist for an examination of the blood with reference to the presence of the plasmodium malariæ, and it is on account of the interest which attaches to this feature which prompts me to bring this report before you.

I have not seen this form of keratitis in any person under the age of sixteen, but have seen it in male and female, white and black. In the first place, there is a history of some form of malaria, and usually the intermittent. Following, sometimes the first chill, sometimes the second or any subsequent one, the patient's eye becomes inflamed. Examination reveals a minute whitish "hair line," or rarely point, on the cornea, consisting of a sup-epithelial exudate. The line may be a row of points,

small round lesions like a string of beads, perfectly coalesced, as Kipp suggests, but I have never been able to satisfy myself that this was the case. There is a varying amount of bulbar injection, usually slight, with pain and photophobia, the latter being subject to variation, and these are all of the subjective symptoms I have noted. The supra-orbital tenderness noted by Kipp and others has been wanting or at least not marked in my cases. On looking at the cornea in this early stage of the disease, the pathological appearance is scarcely manifest except with strong illumination, and the condition is not satisfactorily seen except with a Coddington lens or other magnifier. With this the lesion, which, in my experience, is never multiple at first, reveals itself as I have mentioned. The line varies in length from one to four millimeters and almost fulfills the geometrical definition of a line in having no dimension but length. "Hair line" is, I think, sufficiently explanatory. The loupe shows the base of this line, as well as of the subsequent ulcer, to be composed of numerous white points so small that two or three are accommodated in the width of the line and the corneal substance between them is hazy. This same appearance is seen in other corneal infiltrations, and I have especially noticed it lately in a case of sclero-keratitis. The lesion persists for two or three days without appreciable change except in length and in the rupture of the epithelium over the infiltration. Generally at the end of this time branches begin to form, either by sprouting off from the main one, or by little points forming and extending to the original branch. The appearance then is of a broadening, shallow trough, usually branched, with base of varying gray, the cornea never becoming otherwise disturbed and no vascularity ever appearing. The little trough becomes filled with the detritus as it is cast off, the collection usually projecting beyond the surface of the cornea. At this time, generally the end of the first week, the lesion is quite conspicuous. Healing takes place slowly by filling in of the ulcer and cicatrization. While the process never extends deep, rarely causes hypopyon or iritis, and never perforates, a faint opacity remains, marking the sight of the lesion and causing a visual disturbance only if situated near the corneal center. I wish to compare this description with that of Hansen-Grut and then of Kipp.

Hansen-Grut describes it as "a superficial ulceration with a chronic course and a tendency to become serpiginous. The ulceration continues to propagate itself by means of buds or excrescence so that the line of demarcation of the ulceration, which remains very superficial during the whole course, becomes very irregular. The surrounding parts

remain very clear and the cornea does not become vascular. This affection must not be mistaken for vesicular keratitis. It is no way connected with frontal herpes, nor with herpes accompanying bronchial catarrh or pneumonia, the form so well described by Horner. There is no question of vesicles, and in no case was there any previous disease that could have occasioned an herpetic eruption."

Kipp says "its onset was nearly always attended by photophobia, lachrymation, and the feeling as if a foreign body were under the upper lid and rubbing against the eyeball. Sometimes a severe supraorbital neuralgia ushered in the eye disease. In a few cases little or no irritation was present during the whole course of the keratitis. The eyelids were rarely red and swollen, and the palpebral conjunctiva was in only a few cases much injected and swollen. There was always more or less circumcorneal injection. If the eye was examined a few hours after the appearance of the signs of irritation, there was found in some part of the cornea, usually not far from its margin, a number of small grayish opaque elevations arranged in a line like a string of beads. On the following day these elevations had disappeared, and in their place was found a narrow furrow with a hazy floor and grayish ragged edges. At the same times, or perhaps not until some days later, one or several short grayish, perhaps slightly raised buds were seen to shoot from one or both sides of the original furrow into the healthy cornea. If examined with a loupe these offshoots were also seen to be made up of a line of minute grayish dots placed closely side by side. In the course of a day or two these offshoots were also changed into shallow furrows. Unless arrested at this stage by treatment, the main furrow and the branches continued to grow gradually in length without, however, increasing much in depth or width. The epithelium between the branches, especially if they were placed close together, was, however, often destroyed. In some cases several furrows were developed simultaneously in the cornea. The length attained by the furrows varied greatly; sometimes they measured only a few millimeters when the disease was arrested, while in other cases they extended across the entire cornea at the time the cases were under observation. They usually followed a crooked zigzag course. The furrow always remained quite shallow, and probably seldom penetrated Bowman's layer. The width of the main furrow rarely exceeded one millimeter. The floor and the edges of the main furrow and the branches remained of the bluish gray throughout the course of the disease in the cases which were properly treated from the beginning; but in some cases in which poultices of bread and milk had been applied, the floor and

edges had assumed a yellowish color, and in two of these cases a hypopyon was observed. Perforation of the cornea did not occur in any case. Iritis was observed only in the cases with hypopyon, and was only slight in degree. Severe pain in and around the eye was present in nearly all of the severer cases, and usually continued until the progress of the ulceration was arrested. The sensibility of the cornea was frequently somewhat reduced in the vicinity of the ulceration, but in other parts it was unimpaired. The tension of the eye remained normal throughout the course of the disease."

Exceptions to this course are seen. In the few cases when the primary lesion is a small rounded area of infiltration, the loupe resolves this into fifteen or twenty white points, with hazy cornea between them. I believe I have seen only one case in which the process remained at this stage. Again, the corneal epithelium remains intact, when healing is more rapid and the resulting opacity less noticeable. I may say that when the epithelium is broken, fluorescin by no means always stains the exposed tissue, a fact of which I have no explanation to offer. While the process may spread over the whole cornea, it usually remains confined to a single quadrant.

As regards the form of malarial organism found in the blood of these cases, I have said that the intermittent (tertian or quartan) are most common. The estivo-autumnal also occurs, all indeed except the crescents, which I am informed are not found in the blood of patients who contract malaria in the vicinity of Memphis. Another curious fact of which there is no good explanation.

I might add that I have found no organism in the material scraped from the furrow. Emmert alone claims to have done so.

The affection was invariably limited to one eye in my cases. I have not seen the second eye ever affected.

From what has been said it follows that the prognosis is good. A central opacity or irregular astigmatism, with a consequent reduction of vision, is the most unfavorable result I have seen.

The duration is variable. I have seldom, if ever, seen recovery in less than ten days, and I have seen the condition persist several weeks. Relapses are not rare and are usually due to the same exciting cause as the original attack. Some patients have told me that every "fever" they have "settles in their eyes."

The first therapeutic indication is to arrest the malarial paroxysms, if they exist, with quinine, suitably administered. Following this, or alone if a chronic form of malaria exists, a tonic with Fowler's solution

is indicated. Locally the treatment ordinarily used for other forms of corneal ulcer has been found very effective. A mild antiseptic wash, atropia combined with a soluble salt of quinine, yellow oxide of mercury ointment, and a shade to protect the eye from light, are usually all that is needed. If the ulcers are very sluggish, delicate penciling with carbolic acid, or preferably nitrate of silver, may be resorted to. The curette, carbolic acid, and the actual cautery are sometimes needed when the ulcer becomes infected or tends to spread excessively, but this is not very often. I append the history of the cases in which a blood examination has been made, and in this connection I wish to express my appreciation to my colleagues, Drs. Wm. Krauss and M. Goltman, for the thorough and careful manner in which they have carried out this part of the work. As they both have a skill in hematology which I despair of acquiring, the accuracy of the observation as far as the blood is concerned would have been sadly deficient but for their kind and valuable assistance.

Case 1. August 19th, W. A. B., male, white, aged 30, had been in bed with a malarial attack on the 15th and 16th (one paroxysm) and on the 17th the right eye became sore. The cornea showed a crescentric narrow ulcer toward the inner border with a convexity toward the center. He was given atropia. In a week the lesion was broader, but quite shallow, and the subjective symptoms were better. On September 2d all inflammatory signs had disappeared. The vision in the right eye was defective (15/80) on account of a chorioidal and optic atrophy, the ultimate result in the left eye being 15/60. I might say that thiosinamine was given this man, and produced a return of the inflammatory symptoms in the left eye.

Blood Examination: A very few tertian organisms, some phantom cells eosinophiles, hemoglobinemia, some microcytes, in fact all the evidences of convalescence from tertian malaria.

Case 2. August 29th, C. M., male, mulatto, aged 29. Two weeks before had had "chills and fever," and during the attack the right eye became inflamed and remains so. The cornea showed a fine white raised line diagonally across the upper half. The ball was injected and there was moderate photophobia and pain. He was given atropia and Fowler's solution and promptly recovered.

Blood Examination: Several hyaline intra-cellular parasites and a few coarsely pigmented bodies. The case is one of estivo-autumnal or mixed infection. No typical tertian organisms.

On December 1st, without apparent cause, the same eye became

inflamed. A faint scar of the former ulceration remains, and down and along and parallel to the corneal border two denuded lines are seen, the lower and larger one being quite markedly infiltrated.

Healing was again prompt. On January 23d the eyes presented faint opacities where the ulcerations had existed.

Case 3. September 26th, Miss B., white, aged 19, has had chills all summer, ten in all, the last one thirteen days before I saw her. The left eye had been sore two days; the vision in it had never been perfect. A little up and out from the corneal center was centrally grooved, grayish area, 2 mm. long. There was some bulbar congestion and photophobia, and the iris was a little off color. The little ulcer did not stain with fluorescin. She was given atropia and Fowler's solution, and a couple of days later yellow oxide of mercury. The ulcer filled in from above downward, and she was dismissed on October 1st. Vision O. S. 15/80.

Blood Examination: Blood spread showed very few parasites. Quartan infection.

Case 4. October 10th, Mrs. T. M., aged 30, white. Eleven days before coming to me she had had a chill, followed by five others on alternate days. The right eye had been sore six days, and at the same time the right eye became inflamed herpes appeared on the face and was fading when I saw her. The ball was injected and there was some pain and photophobia. The cornea presented a lesion in the upper and outer quadrant, which the loupe resolved into a delicate branching line. She was just leaving the city on account of her malarial infection, which had resisted quinine, and I only saw her once. She was given an atropia solution.

Blood Examination: Marked hemoglobinemia; extra and intra-corpuscular hyaline bodies, and coarsely pigmented intra-corpuscular parasites. Several nucleated cells (normoblasts).

Case 5. October 20th, H. R., male, white, aged 50. The first attack of malaria in any form that he ever had was an intermittent three weeks before I saw him. One week after the first (and only) paroxysm the right eye became inflamed. On examination the ball was found injected and the cornea showed typical dendritic keratitis with a large T-shaped lesion at the center of the cornea. He was put on atropia October 30th, much better November 3d. The lower branch had filled up, and a yellow oxide of mercury ointment was given November 16th. Slow progress, especially up and out. The ulcer was curetted and a bandage applied.

Blood Examination: A rather severe grade of hemoglobinemia, some corpuscles exhibiting only a faint ring, the body being absolutely

colorless. Hypo-leucocytosis and numerous hyaline and pigmented tertian organisms. The pigment was fine, reddish brown and very active.

Case 6. November 19th, J. H., male, white, aged 50, had had a chill eight days before and another the day before I saw him. The right eye was inflamed before the first chill, and exhibited a clean crescentic trough, below and parallel to the limbus. With a Coddington lens the base could be seen to be composed of fine white points, with hazy corneal tissue between. He was given atropia, yellow oxide ointment and Fowler's solution. November 29th, a chill. The little ulcer making no progress, it was touched with carbolic acid. The patient was then lost sight of.

Blood Examination: Corpuscles very pale, numerous large and small hyaline and pigmented hematozoa. Some corpuscles contain two or three parasites. Tertian infection. Regenerative changes, marked.

Case 7. November 19th, Mrs. J. B., white, aged 31, had been having chills all summer, the last one on October 20th, and the next day the right eye became inflamed. It showed a sub-epithelial infiltrate a little out from the center, 1 mm. in diameter. The epithelium was intact, and probably regenerated. The loupe showed its base to be finely dotted as in the other cases. There was moderate injection and photophobia. Under atropia and Fowler's solution she proceeded to get slowly well.

Blood Examination: Corpuscles pale, a few small coarse pigmented parasites, estivo-autumnal infection. Little or no regenerative changes.

Case 8. November 29th, J. B., male, white, aged 40, in 1873 following a fever, probably malarial, the left eye became sore and remained so for two or three months. In 1878, after yellow fever, the same thing occurred. Last week he had an attack of tertian malaria, and for two days before I saw him the left eye was again inflamed. These three are the only febrile attacks he has ever had. The cornea showed a linear raised and infiltrated lesion in the upper temporal quadrant. The ball was injected, iris hyperemic. He was taking an antiperiodic tonic from his physician, Dr. S. C. Sims. He was given atropia, calomel insufflations and a pressure bandage. On December 2d I curetted the tract under holocaine anæsthesia. The iritic congestion passing to iritis, he was leeched and atropia instilled afterward, with the result that a synechia which had formed yielded, and the eye slowly whitened. I dismissed him the middle of January with an opacity at the side of the ulcer and others more central, from the former attacks. Vision, 15/cc.

Blood Examination: The notes of the examination have been mislaid, but there were evidences of malarial infection. I would suggest that the

attack in 1878 might have been of this character, since all acute febrile attacks then were called yellow fever, a physician often not seeing the patient.

Case 9. December 7th, Mrs. L., white, aged 47, had a chill in September, followed by six hours of fever, and the left eye at once became sore, and remains so. There was considerable photophobia, which was the principal complaint. There was a small central three-pronged corneal ulcer with an infiltrated base. She was given atropia, Fowler's solution, yellow oxide ointment, and told to bathe eyes frequently in hot water. On December 18th she wrote that the eye was still a little sensitive to light and that she had herpes labialis. I received no further report.

Blood Examination: Many pigmented aud unpigmented organisms. From the distribution of the pigment, the infection would seem to be estivo-autumnal, but from the size and shape of the parasites and the condition of the corpuscles, it looks like a tertian infection. It may be both. There is a good color index, with only very slight hemoglobinemia. Slight regenerative signs.

Case 10. January 14th, C. O. B., male, white, aged 50, had been having chills and fever for two weeks, the last attack twelve days before I saw him. The right eye had been sore nine days. A beautiful delicate raised line of infiltration curved up within and parallel to the limbus of the lower and inner quadrant, tipped with a little coronet of three prongs. He was given atropia and later, yellow oxide ointment.

A small round area developed at the lower extremity of the infiltrated line and another in the center. At these three points the epithelium was cast off, but remained intact elsewhere. The line slowly faded, the points persisting as little hazy areas for two weeks. There was considerable bulbar injection in this case.

Blood Examination: Spread very poor and stains badly. Anemia marked, no hemoglobinemia, slight lymphocytosis, some doubtful pigmented bodies that might be tertian organisms; while it is doubtful, it looks very much like malarial blood.

Continental Building.

Opticians Responsible for Injuries to Health from Glasses they Prescribe.—Simon Fleischmann of Buffalo, N. Y., chairman of the supervisors' committee on laws and legislation, has won his suit against Alexander Martin, optician, of Philadelphia and Buffalo. Justice Braunlein decided in his favor, and awarded him $54.44 damages, the full amount asked for.—*Chicago Medical Recorder.*

"FURTHER OBSERVATIONS CONCERNING THE CHECK LIGAMENT."*

J. ELLIOTT COLBURN, M.D.,

Professor Ophthalmology Chicago Policlinic.

Illustrated.

In the OPHTHALMIC RECORD, January, 1897, I made a report of observations on the living subject and cadaver, and called attention to the part played by the check ligament in regulating the action in the eye muscles and limiting the range of rotation of the globe. In this report I also cited cases in which had been used the results of my observations. I desire now to supplement the observations made at that time and report some new cases with additional data which I hope will interest and call out discussion. I make no claim to originality of observation. The importance of these connective tissue bands was suggested to me by dissections made some years ago, and it is only within the past two months that the work of Mortais and the comments of Maddox have come to my notice.

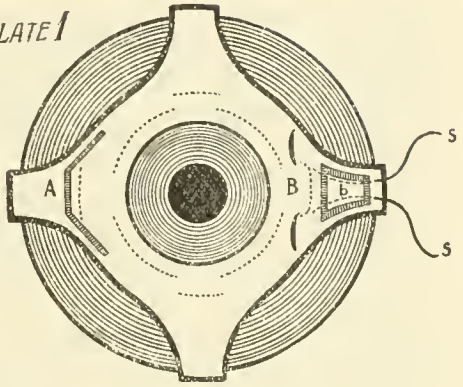
The following cases I used as experimental studies with the full consent and approval of the patients:

Experimental Case 1. Mr. T., aged 28 years, had suffered from convergent squint from early childhood. He habitually posed his head to the right or left according to the eye used in fixation. The vision with +1.50 sph., =20/30 each eye. With the head held stationary and objective point in median line at one meter from the forehead, the eyes made futile attempts at alternating fixation: forced right or left abduction brought eyes to the median line. After cocaine anæsthesia, attempts were made to produce instrumental abduction with scarcely better results than before. Believing this to be due to check ligament interference I made a free incision of the check ligament, using forcing stitches as per Plate III to exaggerate the result. The eyes were operated separately at an interval of two weeks with the result of free abduction and diplopia with images ten prism degrees apart. This error was gradually corrected with prism exercise, and the diplopia disappeared. The muscles in this case were not interfered with.

Experimental Case 2. Mr. H., aged 32 years, congenital squint, with

*Read before the Western Ophthalmologic and Oto-laryngologic Association, February, 1899.

PLATE I



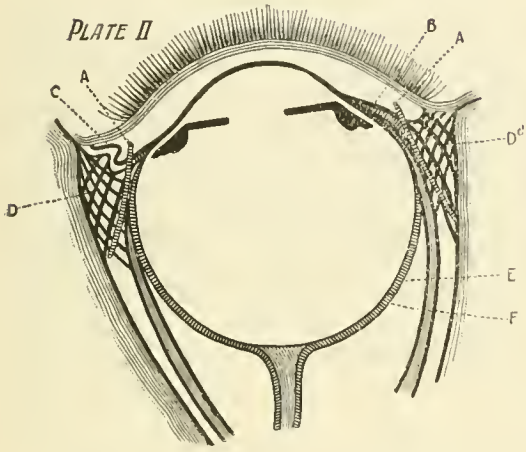
A. Line of incision in graduate tenotomy.

B. Advancement of tendon.

b. Excised portion of tendon.

S S. Sutures.

PLATE II



A. A. Lines of incision.

B. Conjunctiva.

C. Plica Semilunaris.

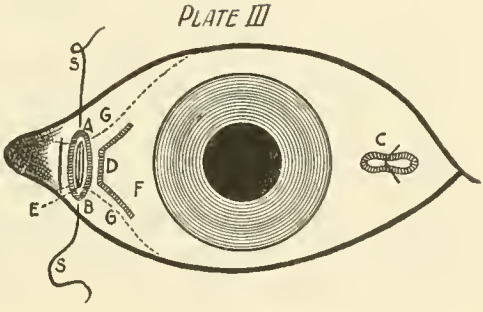
D. Internal Check Ligament.

Dd. External check ligament.

E. Space.

F. Tenon's Capsule.

PLATE III



A. } Incision through conjunctiva and
B. } check ligament.

C. Result of bringing A and B together with a suture.

D. Lines of cut in tendon.

E. Check ligament.

F. Conjunctiva.

G. Expansion of tendon, internal rectus.

S S. Sutures.

imperfect development of left side of face and head. The left eye was placed fully 10 mm. lower than its fellow and much nearer the nose, giving him the appearance of having a high degree of esotropia. The actual measurement gave right hyperphoria 20°, and 60° esotropia. Fixation was accomplished by posing the head forward and to the left, the right eye being used.

Vision, right eye with +2 D. sph. ⌒ +1 D. cyl. axis 90°, = 20/20.

Vision, left eye with +2 D. sph. ⌒ +3 cyl. axis 90°, = 20/40. With head fixed, abduction right eye gave 10° to the temporal side of the median line.

Operations: Right eye—free incision of check ligament as in Plate II and forcing stitches, as in Plate III, gave increased abduction, but was not satisfactory. The internal rectus tendon was then pierced and a hook used to search for adventitious bands extending between the capsule, the tendon, and the ocular wall. One was found and severed, allowing of great increase of abduction. The superior rectus was then exposed and its check ligaments freely incised. The tendon itself, however, was not interfered with. The result of these operations was an abduction of 40 geom. degrees, and an increased subduction of 10S. Four weeks later the left eye was operated upon, check ligaments of the internal rectus being operated upon. Here again the muscles were not interfered with. The result of this was an abduction of 30 geom. degrees, and a circumduction of 20 geom. degrees. A diplopia followed these operations with images separated by 15 prism degrees. Three months later the fusion of images was quite constant and the head in normal position. The range of abduction and adduction was slowly becoming more nearly normal. To-day he has normal binocular vision with but slight manifest hyperesophoria.

Experimental Case 3. Mr. W., aged 23 years, teacher. In early infancy the right eye was noticed strongly convergent and turned somewhat above the normal. As the patient expressed it, "that eye was always turned up into his head." When he presented himself to me for examination the left eye had full normal rotation, vision = 20/20; right eye strongly convergent with limited movement. Attempts at abduction resulted in slight suberduction. Forced abduction under cocaine showed eye to be limited to about 30° abduction, and at no time was I able to bring it to the median line. The refraction of the eye, +3 D.; the vision with this correction, 10/200. The procedure in this case was, first, to penetrate the conjunctiva over the internal rectus muscle, grasp the muscle and dissect it away from the ocular attachment, displacing the

capsule of tenon as little as possible. The eye was more movable than before, but on account of the conjuntiva never having been free, the eye could only be rotated to the median line. I then introduced Stevens' barbed hook, drew the muscle forward and reattached it as nearly as possible to its old attachment. The next step was to introduce a long blade Stevens' scissor and freely sever the check ligament; I could then rotate the eye outward 30° beyond the median line. I reinforced the stitches holding the tendon to the globe, increased the size of the conjunctival aperture, approximated the angles of the conjunctival wound, thus increasing the length of the conjunctival and subconjunctival tissues from the sclero-corneal junction to the canthus. In order to insure and maintain forced abduction I introduced a silk suture into the conjunctiva to the temporal side of the cornea and fixed it with an adhesive strap to the temple. The eye made a good recovery. As soon as the recti muscles regained their control of the movements of the globe a good coordination followed. I then freed the check ligaments of the opposite eye, and two weeks later the patient returned improved. A recent letter informs me that the eyes are apparently normal in position, and that the acuity of vision is greatly increased in the right eye. This is a case of monocular squint with contracted check ligament, corrected by first freeing the muscle of adventitious heads, then freely severing the check ligament and using a forcing stitch to increase the length of the free conjunctiva from the globe to the corneal margin. The only object in making a tenotomy was to first see if the section would free the eye. In a later case the result was obtained by searching for connective tissue bands between the muscle and the globe with a strabismus hook and without severing the tendon. In the four additional cases this method was successful.

These studies were made with the hope of finding out, if possible, how much can be accomplished in selected cases by simple freeing of the check ligaments, and has resulted in a material modification of all of my operations on the recti muscles. The cases selected for operation are those in which the voluntary movements of the eyes are limited, and the use of the fixation forceps, the eyes under cocaine anæsthesia, also meets with sufficient resistance to prevent free forcible rotation.

The application of conclusions arrived at from these and other studies to the treatment of heterotropia has resulted in:

1st. Insisting upon the elimination of errors of refraction and accommodation, allowing, sometimes, weeks and months to elapse before resorting to operative treatment. To do this careful measurement records must

be made at intervals in order to note the variations of the deflections of the eyes.

2d. It is necessary to note the range of abduction and adduction, and, in fact, all the movements of the eyes. For this purpose, I have used the perimeter and the reflected card as the most convenient gauge for the measurement of the maximum field of rotation. To illustrate:

Master T., aged 13 years, convergent squint. Left eye=60°; maximum adduction=15° each eye. Had error of refraction, hypermetropia 2D. Atropine was used and a full correction given. Mydriatic was continued for six weeks. At the end of that time, convergence=45°; maximum abduction, left eye, 25°; right eye, 20°. There was no variation from my former record at the end of the eighth week, when I made a free incision of the check ligament of the internal rectus. The immediate result of the operation was not notably successful, but on the fourth day the patient complained, for the first time, of diplopia, and at the end of four weeks there was normal free abduction and adduction with a manifest esotropia of 10°. The diplopia gradually disappeared and the eyes were apparently straight.

There is another point which has engaged my attention in cases of both heterotropia and heterophoria, and that is the angle at which the base of the orbital cavity is placed in relation to the plane of the median line of the face.

The myope usually has a thin, narrow face, sharply receding from the median line. The external canthus is much further back than in the emmetrope, and the base of the orbit is placed at a much wider angle. The check ligament of the internal rectus is attached much further forward than the check ligament of the external rectus. The internal rectus draws directly against its check ligament, while the external rectus has no such restraining influence. Myopes are prone to have exotropia or exophoria. On the other hand, you will observe that the external canthus of the hypermetrope is nearly on a line with the internal canthus, and the plane of the base of the orbit is the same, or on a very acute angle to the plane of the face, and the external rectus has the same difficulties to overcome as the internal rectus of the myopic face, and they are prone to the opposite conditions. It can hardly be doubted, I think, but that these static structures must have some influence in producing muscle anomalies.

The influence of the check ligament upon the muscles producing heterophoria has been but little considered. Yet I believe it has an important part in many cases and may to some degree explain the diversity of opinion regarding the merits and demerits of the various oper-

ations and procedures for the relief of these anomolies. I merely mention this as offering an explanation for the difference in practice and difference in results obtained by operators. The researches of the French anatomist and physiologist, Mortais, suggests an entirely new field for study.

I have not observed a sufficient number of cases, as yet, to make my statistics of any value, and merely offer this to you, hoping that some among you will have interest enough in the matter to continue the study.

A CLINICAL REPORT—EMBOLISM OF LOWER BRANCH OF CENTRAL RETINAL ARTERY—PSEUDO-GLIOMA —PARALYSIS OF THIRD NERVE.*

BY WARWICK M. COWGILL, PH. B., M. D.

PADUCAH, KY.

CASE 1. *Embolism of a Branch of the Central Retinal Artery.*—Mr. M. E. C., aet 35 years, came to me on July 24th, 1897. His statement was as follows: About thirty-six hours previous he first noticed peculiar vision in his left eye. It came on suddenly and appeared as if a drop of water or mucus was hanging from his upper lid, obscuring his vision when he looked up. He made repeated efforts to wipe the offending body away. There was no pain. His previous health had been good. Had never had any serious illness and was at this time in good health. Examination of the eye showed a slight blanching of the lower half of the optic disc, with a diminution in the caliber of the lower branch of the central retinal artery. The fundus otherwise presented a normal appearance. Examination of the field of vision with the perimeter showed blindness of the upper field coming almost down to a line drawn horizontally through the center of fixation. $V = \frac{15}{200}$. This vision is eccentric, as he is obliged to fix slightly above the object he wishes to see. The treatment in embolism of the retinal artery, or of its branches, is directed to those measures that may induce the embolus to travel further on in the artery, thereby reaching a position in which the least amount of damage will ensue by reason of the lost blood supply; that is, get the embolus as near the terminus of the artery as possible. In the very earliest moments after the occlusion has occurred, and before firm agglutination has taken place, efforts in this line may be successful. To accomplish this object the two main measures are (first) dilatation of the arteries by means of inhalation

* Read before the annual meeting of the Southwestern Kentucky Medical Association. May, '98.

of amyl nitrite, and (second) lessen the intra-ocular pressure by paracentesis, thence by comparatively increasing the vis-a-tergo. These measures have proven successful occasionally when used in the very earliest stages, but after twenty-four or thirty-six hours little or nothing can be expected from them. The treatments I used in this case were massage and galvanism. This was continued daily for a month with no perceptible change in the eye. A recent examination (May 11, 1898) of the eye shows an unchanged condition in the amount and field of vision. The optic disc is much whiter than when first seen, and the artery remains bloodless. Arterial embolism is a sequence of endocarditis or endarteritis. So in these cases we look for some heart lesion or a history of rheumatism. In this case there was no history of rheumatism nor any heart lesion that I could make out.

CASE 2. *Pseudo-Glioma*—John McG., aged two years, seen with Dr. Reddick. Two months before my seeing him he had meningitis. After recovery from the meningeal trouble the left eye became inflamed, but recovered. Then the right eye became affected. On examination I found the right eye much inflamed; extensive adhesions of the iris to the lens capsule; eyeball soft, T-2; and exquisitely tender on palpation. There was a yellow reflex from the fundus, apparently coming from just behind the lens. The eye was absolutely blind. I advised enucleation, which, with the assistance of Dr. Reddick, I did. From this the boy made an uneventfully recovery. On opening the enucleated eye-ball the globe was found filled with a purulent, copper-colored fluid; the retina was totally detached and lying in a mass behind the lens. It was this mass of detached retina that caused the yellowish reflex. The eye trouble in this case, I think, was a sequence of the meningitis, and due to septic metastatic infection.

I wish to add further, in this case, that shortly after the boy recovered from the enucleation he had measles. When he recovered from the measles his mother found he was totally deaf, which was confirmed by an examination. The question arises, was the deafness caused by the meningitis or the measles? We know that deafness is not an unusual sequence of either of these two diseases.

FOUR CASES OF PARALYSIS INVOLVING THE THIRD NERVE.

Paralysis of the third nerve is neither very frequent nor very infrequent. These four cases have occurred in my practice in the past two months; and as each presents a different phase, I thought they might prove interesting.

Case 1. *Complete Paralysis of the Third Nerve Supplying the Left Eye.*—Ray R——, aet 11. Brought to me by Dr. Alcock, of this country. Trouble about the eye was first noticed some ten days before I saw him. The boy had had no sickness, except some mild malarial trouble. There was complete ptosis; slight protrusion (proptosis); marked divergence; and except a slight rotary motion given to the eye by the superior oblique, the ball was totally immobile. The pupil was unduly dilated and did not respond to either light or accommodation, with complete paralysis of the ciliary muscle. The fundus appeared normal; V = $\frac{5}{40}$ (the right eye normal). There was slight pain in the orbit on pressure. There was pressure on the third nerve, but its location and character we could not determine. There was no specific history. However, we decided to put the boy on small doses of potass. iodide, but this upset his stomach and was discontinued after a few days. Three weeks after I saw the case Dr. Alcock reported that a week after the boy was to see me the pupil of the right eye became dilated and remained so for five or six days. None of the muscles of the right eye were paralyzed. He still complained of pain in the orbits. But at that time (three weeks after I first saw him) both pupils were normal and movement of the left eye almost normal, with still some diplopia. Other nerves became affected, notably those of his arms. These changes show that the pressure was shifting. This boy died about two months after I first saw him. I think he had a basal meningitis. Could it have been tubercular?

Case 2. Cora McC., negro, aged 21, paralysis, third nerve affecting right eye, ptosis and slight protrusion with very marked divergence right eye. The ball could not be moved up or down, but could be converged to the median line; pupil semi-dilated and fixed, accommodation entirely paralyzed. This condition had existed for several days. There were large ulcerated patches on both tonsils. This case was clearly of syphilitic origin. I prescribed mercury by inunction. Result unknown, as I did not see the patient again.

Case 3. Calvin B., negro, aged 22. Both pupils widely dilated with complete paralysis of accommodation, right and left. In this case the ocular muscles were not affected. The patient acknowledged having contracted syphilis one year ago. I prescribed mercurial inunction. Patient disappeared. Result unknown.

Case 4. Mrs. E. D. W., white, aged 29 years. Paralysis ciliary muscle and iris left eye (right eye normal), of two weeks' standing; came on suddenly. Personal surroundings and history of buccal ulceration, with skin eruptions, confirm the syphilitic origin of this case. Treatment—

Anti-syphilitic and galvanism to the eye daily. I saw her only four or five times, during which time there was some improvement in her condition. Result unknown.

To sum up these four latter cases. In the first case there was total paralysis of the third nerve going through the eye affected. Cause known.

In case two there was almost a total paralysis (the internal rectus had a little contractile power) of the third nerve to the eye affected. Cause syphilis.

In case three there was paralysis of the branches of the third nerve, contracting the iris and ciliary muscle in both eyes. Cause syphilis.

In case four paralysis of those branches going to the iris and ciliary muscle in one eye only. Cause syphilis.

Inequality of the Pupils.—An article in *Médicine Scientifique* states that the pupils are not rarely unequal in healthy persons, evidently a congenital peculiarity. In these cases the right pupil is more frequently dilated than the left. In cases of cancer of the stomach the left pupil will be found dilated more than the right. In hypermetropic cirrhosis, the right pupil is more dilated than the left. In pleurisy the pupil on the side affected is dilated.—*Crónica Méd. Méx.*, February 1st.

Sublimate in Infective Iridochoroiditis.—Addario states that subconjunctival injections of sublimate have very little effect upon chronic infective iridochoroiditis, while they rapidly cure the acute form. Inflammatory products with a tendency to organization fail to disappear with the sublimate treatment. It may prove effective in the premonitory symptoms of sympathetic ophthalmia, due to infective choroiditis, but once established it is a long and difficult task to influence it.—*Rev. Gen. d'Oph.*, December 31, 1898.

Nervous Blindness.—J. Ramos relates a number of interesting cases of sudden, absolute blindness appearing in nervous subjects after severe emotion, and gradually passing away in a few days or weeks. Another case was a healthy, serene young woman, entirely free from nervous or hysteric antecedents, suddenly affected with blindness while calmly sewing in her room. His favorable prognosis was confirmed by the gradual recovery of sight in a fortnight. No disturbances could be noted in either eye, in any case.—*Gaceta Médica*, Mexico, January 1st.

NOTE ON THE NORMAL OPACITIES OF THE CORNEA.*

BY H. GIFFORD, M.D.

OMAHA, NEB.

For several years I have been demonstrating to my assistants and friends what I have called the normal opacities of the cornea. Everyone who has examined the cornea with a brilliant oblique illumination has doubtless observed a delicate haziness, but that this haze can be resolved upon higher magnification into distinct minute opacities, is not, so far as I am aware, commonly known. The first reference to it which I have heard of is this paper of Dr. Gradle's. He refers to those opacities as occurring in various pathological conditions, and also intimates that something of the kind occurs, at times at least, in normal eyes. What I wish to insist on is that they can *always* be seen where the iris is dark colored or not excessively small, if one has a good lens and pays sufficient attention to the illumination. The simple lenses ordinarily used for examining the cornea do not magnify enough to make the observation of the opacities easy, but it is not necessary, on the other hand, to have one of the more complex corneal microscopes. A compound Coddington or Hartnack lens reveals them well if the illumination be sufficient. This, as Dr. Gradle insists, should be intense. The image of the source of light must be focused accurately upon the upper layers of the cornea. Under these conditions the normal corneal haze is seen to consist of innumerable discrete opacities, more or less irregular in shape, with rather indistinct but on the whole somewhat curved borders. In the neighborhood of any ulcer, foreign body or other source of irritation in the cornea there is a great increase in the size and density of these opacities. They represent, I think, the so-called corneal corpuscles or lymph spaces of the cornea, and the changes which occur in them under the influence of irritation are probably due to a rapid proliferation of the cells lining these spaces, and, in later stages, perhaps, to the migration into them of true leucocytes. Although I have called these the normal opacities of the cornea, I have done this, to a certain extent, to avoid circumlocution, since in the normal cornea they cannot be seen by directly transmitted

*Remarks (with slight additions) made in the discussion of Dr. Gradle's paper at the '98 meeting of the American Medical Association. See Journal A. M. A., XXXI, 13, p. 701.

light, and they probably offer no obstacle to the clearest possible vision. We see them by oblique illumination on account of the difference between the refractive index of the contents of the lymph spaces and that of the surrounding corneal tissue, somewhat as we often see the stellate figure in a perfectly clear lens.

Treatment of Corneal Opacity.—Corneal opacity is first a round-celled infiltration, with later spindle-celled and fibrous transformation. The more advanced the fibrous transformation and the fibrous tissue incorporated as a fixed constituent of the substance of the cornea the less favorable the prospects of cure, consequently the necessity of early treatment. The healing process can only be a reabsorption and reorganization, and all medical treatment is futile. The only means of hastening and promoting the process is massage of the bulbus and of the region surrounding the eye. Vèhmeyer massages through the closed lid, for fifteen minutes, two or three times a day, until there is a sensation of "burning heat," with a bandage over the eye afterward to enhance the effect of the massage.—*Munich Med. Woch.*, Dec. 20, 1898.

Tropacocain for the Eye.—Rogmann concludes a review of the various local anesthetics used in ophthalmology, by expressing his preference for tropacocain (Giesel and Leibermann, 1891). The anesthesia is more complete than with others, more rapid in its appearance and more permanent than with cocain. It affects even inflamed tissues. Mydriasis is rare and slight. It has antiseptic properties, and the solution keeps a long while and is much less toxic than cocain. He uses a three per cent solution with marine salt, 6 per 1000, which deprives it of all irritating properties. The anesthesia is so prompt that for the extraction of a foreign body the cornea can be scratched almost immediately after the instillation of a single drop. Two drops in the conjunctiva opposite each muscle are sufficient for a strabismus operation. In some cases the consecutive painful reaction seems more pronounced than after other anesthesia.—*Belg. Med.* 1897.

Chavas cited a case in Gazeta Med. of a medical man suffering from undoubted epilepsy. He had a high degree of hypermetropic astigmatism and convergent strabismus. Correction of his refraction and tenotomies of both interior recti instantly relieved the epilepsy.

CORRESPONDENCE.

Denver, Colo., February 20, 1899.

Editor Ophthalmic Record: Dear Sir—I must take exception to a "News Item" appearing in the Record wherein you refer to an article of mine which appeared in the *Colorado Medical Journal* as "*openly advocating* the paying of commissions from specialists to family physicians for patients sent from the latter to the former." I enclose the article you refer to that you may read it. I feel sure that you have not read it, or you would not make the above statement. This paper of mine referred to has been very generally criticised, mostly by men who have not read the original article published by me, but have depended upon some criticism, the latter having served as an incentive to write something on the growing evil of paying commissions. The point I made in my paper was entirely overlooked, or was of no importance to the majority of my critics, *that compensation from the specialist to the general practitioner is only justified when the physician has expended time and energy in getting his patient to go to a specialist or has prescribed for his patient a few times before he can get him to go, and for which he would not think of sending in a bill for fear of giving offense.* I do not object to criticism directed to the theme of my paper. I do object to the paper being made the scapegoat for editorial comments on the abuse of commission giving, wherein I am referred to as advocating paying commissions. I feel that a perusal of my paper will convince you that I advocate nothing of the kind; on the other hand I believe you will find that there is not a line in the paper that does not oppose paying commissions.

I should be very glad if you would give this letter, as well as the enclosed paper, publicity in the Record, that my position may be more fully known. The majority of my friends, no doubt, have read only such criticisms as referred to, and are ignorant of the actual contents of the original article. Very truly yours,

Melville Black.

SHOULD THE GENERAL PRACTITIONER RECEIVE A FEE FOR REFERRING CASES TO THE SPECIALIST?

BY MELVILLE BLACK, M.D.

DENVER, COLO.

It may seem to a certain few that such a subject should be left out of print. I do not consider it a delicate question, nor one that is best discussed *sub rosa*. I believe that in a certain number of cases the physician should receive a fee for referring cases to the specialist.

The general practitioner is called upon to render every kind of medical and surgical service. If he sees fit to send certain cases to a specialist he displays magnanimity unparalleled in other fields of labor. We will admit that in many instances his training and equipment are inadequate in some of the departments now presided over by specialists. The advancement of medicine and surgery has made it difficult for any one man to keep abreast of the entire field. He frequently recognizes that his knowledge in some one department is deficient. He is honest and tells the patient so. The patient is sent to a specialist. There are many instances where the practitioner has found it advisable to administer to his patient for several days before it is possible to refer him to a specialist. Again, in his anxiety for the welfare of his patient he may make several visits in the endeavor to cause the latter to consult the specialist, or may lose valuable time in going with him to the specialist. In any event he expends a certain amount of his time for which the patient will not compensate him. The patient and his family have long looked upon him as their friend and medical adviser. They never think of paying him for aught except actual professional services. They would not consider such services professional and he would gain their displeasure if he were to present his bill for the same. In case he has treated the patient for a few days he would better erase any and all such charges for professional services from his books, because the patient considers that he has received no benefit from this treatment; that his physician did not understand his case or he would not have sent him to some one else. Therefore if this

bill is presented no attention is paid to it, and if payment is pressed, the next time a physician is needed someone else is called in. Now who is to compensate this physician? There is but one answer—the specialist. If the specialist does not pay him for the time he has expended no one else does. The specialist can easily learn from the patient the extent of the services rendered by his physician. The latter should then be compensated accordingly.

There are many times when the family physician is asked to recommend a specialist. He is not called upon for services nor does he find it necessary to see that the patient goes where directed. He is not inconvenienced nor does he spend any of his time upon the case. Here it is not incumbent upon the specialist to pay the practitioner for his kindness.

Many an obscure practitioner gains standing and even prominence through the specialist. Specialists to whom he refers cases make it a point to speak well of him whenever the opportunity is afforded. *This is the only honorable way in which the specialist can return many favors and acts of kindness shown him by the general practitioner.*

We all make mistakes, even the general practitioner. What he has done for a given case may not meet with our approval. A hasty word or a sign of disapproval may ruin the reputation of this physician in the eyes of the patient. Hence many cases are not referred because of some such former experience. Again the time expended on a case has been considerable, to say nothing of the mental worry. To refer the case may mean that all this goes for nothing. The man to whom the case is referred forgets to even say thanks. A few such experiences tend to sour the general practitioner against specialists in general.

The object of this paper is to draw a closer bond of union between the general practitioner and the specialist; to call the attention of the specialist to his duty whenever it is plain.

I do not recommend that physicians be paid a stipulated percentage of all fees received from cases referred by them. I should consider this a great wrong. What I do advocate is that when a physician has expended time and energy in getting a patient to come to us, or has prescribed for the patient without compensation, it should be our duty to pay the physician a reasonable fee.

Eosin in Ophthalmology.—Dr. Sorigner calls attention to the advantages to be derived in cases of ulceration, foreign bodies, etc., in the eye, from a drop or so of a two per cent solution of eosin, which stains the altered tissues, etc.—*Anales de Oftalmol.*, December, 1898.

REPORTS OF SOCIETIES.

CHICAGO OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

REGULAR MEETING, JANUARY 10TH, 1899.

Dr. Coleman in the Chair.

Dr. Casey A. Wood reported a case of *embolism of the central retinal artery.*

The subject of this report is W. H. M., aged 56. He has a history of acute articular rheumatism of twenty years' standing, with subsequent relapses, and has acquired an aortic regurgitation. He never had any trouble with his eyes except the usual presbyopia, until two days before the date of presentation, when he noticed a cloud over his left eye, which came on while reading, without pain or other symptom. He shortly afterward found he could see better with the affected eye by looking sideways. He was seen about sixty hours after the blindness. V L=1-5 eccentrically, and Jaeger XVI.; not improved. V R=1 and J i with glasses. There is a well-marked edema of the whole left retina, except of a small area extending from the temporal third of the disc to within a D D of the fovea. The latter is occupied by a small reddish spot. The veins have a slightly marked, sausage-like appearance. The arteries are smaller than normal, and partially covered by the retinal swelling. The sausage-like appearance of the former is seen to be partly due to their occasional burial in the opaque retina. There are no marked changes in the disc. During the following two weeks the edema gradually lessened (the vessels becoming more plainly visible), and the unaffected retinal area seems larger. The point of interest in this case is the presence of several cilio-retinal arteries supplying this portion of the fundus. When first seen the swelling of the retinal elements was quite marked, and seemed to encroach upon and overlie the island of the normal retina, so that with the ophthalmoscope one could appreciate the difference in the level between the normal retino-choroidal epithelium and the upper layers of the edematous retina.

The treatment was that of Fischer—deep massage of the globe, pro-

longed and rather severe, with albolene, or plain vaseline, which was put into the conjunctival sac and pressure made especially upon the equator of the globe continuously for ten minutes at a time. The results were probably negative, although the massage was persevered in for a week. The fundus picture is by Miss Cleveland, and shows very well the cilio-retinal vessels and the unaffected area of the retina supplied by them. Several confreres examined the case in its various stages, but were not able to find any trace of the embolus. All the signs point to its lodgment behind the globe in the main body of the artery. The accompanying perimeter charts show several observations, at regular intervals, of the size and shape of the field.

Dr. F. C. Hotz: These cases are interesting on account of their final outcome. We know that there are no definite means to help these patients. Cases have been reported in which massage has been successful, but Dr. Hotz's experience coincides with Dr. Wood, that massage has not benefited any of the cases in which he has used it. He asks Dr. Wood whether he thinks iridectomy had anything to do with the result he reported in a case of embolism some time ago.

Dr. Wood did not obtain a brilliant result from iridectomy, and has only treated cases of recent origin. The case Dr. Hotz refers to came under Dr. Wood's observation three or four years ago. Inasmuch as the prognosis was gloomy and other treatment had failed, an iridectomy was suggested as a last resort. It was a case of partial embolism of the artery, and a measurable improvement in central vision, and in the field of vision certainly followed the iridectomy; but it may properly be regarded as an open question whether the operation should be given the credit of the improvement.

Dr. W. F. Coleman reported a case of embolism of one of the infero-nasal retinal vessels with recovery. There was a history of loss of vision for about four weeks. The patient came to him about a year ago, when vision was equal to counting fingers at twelve feet. The patient was told that there was very little use of attempting to treat him, as no treatment would seem to offer any prospect of success. Galvanism was tried, about a dozen treatments being given, using from five to seven milliamperes daily. At the end of these treatments he could read the second-hand on a watch. His field of vision became largely increased, perhaps within ten or fifteen degrees of normal. While this treatment and recovery may have been simply a coincidence, or the case one of spontaneous recovery, Dr. Coleman doubts it very much. The man was seen four months afterward, and his vision remained equally good.

Dr. Ware recalled a case in which galvanism was used with temporary improvement, but it relapsed.

Dr. F. C. Hotz reported a case of *Hysterical Amblyopia* in a young lady. She had been seized with violent pain in forehead and failure of vision in left eye. There was a history of vision having been obscured for several hours in the right eye. R V = $\frac{20}{30}$, unimproved by glasses. No changes in any part of the eye could be detected by ophthalmoscope. The field of vision for white and colors was markedly contracted with inversion of the color fields. L V = perception of shadows; pupillary reaction good; media clear and papilla well defined, with some fullness of the retinal veins. Two months after examination vision returned in left eye and headaches disappeared. About two weeks after being sent away to school, the headaches returned and grew very severe and almost continuous, her studies being kept up with the greatest suffering. On her return from school Dr. Hotz found R V = $\frac{20}{30}$, L V = $\frac{20}{100}$. Her refraction was worked out under homatropin and cocain, and the following correction was ordered for constant wear:

RE + 1.50 sp ⌒ + 1 cyl. ax. 90 = $\frac{20}{20}$

LE + 2.50 sp = $\frac{20}{40}$

Optic discs clear, but presented a peculiar glistening appearance.

No relief from frontal headaches was experienced after wearing these glasses for one week. The fields of vision were again taken, showing much contraction of the color fields, but this time the green being much smaller than the red field. The left field presented a peculiar kite-shape appearance, extending downward very much and considerably contracted above.

Dr. William H. Wilder had also seen this case. The girl was of a pronounced neurotic temperament. Vision was 20/20 in each eye with proper correction of the refractive error. Later she developed sudden partial blindness of the left eye, at which time Dr. Wilder saw her in consultation with a physician. He examined the field of the left eye and found some of the characteristics of hysterical amblyopia, namely, the green field in many places larger than the red. He did not see her in a previous attack when the sudden blindness came on in one eye. He felt pretty sure that the case was largely hysterical, an opinion concurred in by Dr. Herrick, and accordingly a favorable prognosis was given. Dr. Wilder saw her mother once during the past year, and she told him that her daughter had recovered entirely.

Dr. Clark W. Hawley has had an hysterical case similar to the one described, there being a marked change of the field in violet and blue,

both coming considerably inside of the red. At first, only the green and red fields were tested, and later it was suggested to try violet and blue. The hysterical characteristics showed more markedly under them than in the green or red.

Dr. W. F. Coleman reported the sequel of that case on which he had performed Mules' operation, which is not favorable. Two weeks after he had shown him to the society the glass ball began to appear. The edge of the wound was freshened and closed with sutures, but not successfully. One night before the glass ball escaped there was excruciating pain in the stump. Within two days the eye began to get inflamed, and very soon a well marked case of serous iritis developed, which suggested a sympathetic origin. The pupil dilated well and regularly under atropin. Mercury was given internally, and hot applications applied, and recovery is taking place slowly from the iritis. His vision is to-day 20/20 minus. A ball has been inserted in the conjunctival sac, and has behaved itself respectably, and made a good stump. Dr. Coleman has tried a sponge in the capsule, but as suppuration followed was not gratified with it. He believes it is difficult to implant a sponge under the tissues, and make it remain without suppuration following.

Dr. Clark W. Hawley reported the condition of the man he exhibited to the Society about a month ago, in whose eye there was a dislocation of the lens after needling. Absorption went on quietly without further operation, and he now has vision of 6/9, with + 10 D spherical. Dr. Hawley saw him a day or two ago, there being no disturbance from the dislocation whatever, and the capsule is very clear. A poor result was expected, but on the contrary it is very good. The spots seen on the anterior surface of the capsule are not now visible.

SECTION ON OPHTHALMOLOGY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting January 17, 1899. Dr. George C. Harlan, Chairman, in the chair.

Dr. de Schweinitz reported the results of *three operations for Ptosis*, performed according to the method described by Dr. J. O. Tansley (Trans. Amer. Ophthalmolog. Soc., vol. vii, 1894-96, p. 427). The first was a congenital ptosis in an Italian boy, aged 11, in whom result was only tolerably satisfactory; the others were cases of traumatic ptosis, one of twenty years' standing (the levator having been cut), and the other of six

weeks' duration (from a blow with a blunt instrument). In the last two cases the result had been excellent. In one of these patients, presented before the Section, the lid movements, six months after operation, were perfect. The levator, however, had regained much of its power.

Discussion.—Dr. G. C. Harlan had been pleased with his success in several cases in which he had operated according to the method suggested by Grandcléments. Dr. C. A. Oliver also preferred this method in the congenital and paralytic types of ptosis, but advised against the use of chromatized catgut on account of its tendency to denude the cornea of its epithelium. In true traumatic ptosis he preferred, as he had successfully done in two instances, to find and resect the levator muscle.

Dr. Charles A. Oliver gave the history and described the specimens of an almost unique form of injury to the optic nerve by the passage of a *piece of steel completely through the eyeball and the optic disk*, the metal being found almost wholly situated in the optic nerve outside of the eyeball. Immediately after the accident, vision, with the exception of a small field of light-perception, situated down and out, was absolutely lost, thus hazarding the assumption of involvement of the outer and lower portions of the optic nerve in the traumatism, which was afterward proved to be so by post-mortem examination of the parts. The case is interesting by reason of the character of the traumatism; the comparative rarity of the position of the point of exit of the metal; the correctness of the clinical opinion based upon the character of the vision of the actual involvement of the optic nerve; the inability of a powerful magnet to withdraw the foreign body back into the eyeball; and the anatomical proof of the wisdom of the judgment that blindness would have become complete if the eye had been let alone.

Discussion.—In 1893 Dr. de Schweinitz was consulted by a gentleman for atrophy of the left eyeball and irritability of the right eye, possibly from sympathy. Seventeen years before, the patient had been struck with a sliver of iron in the left eye. At the time of examination he had a 4 mm. scar in the ciliary region of the sclera, extending into the cornea, annihilation of the anterior chamber and tenderness in the ciliary region. No light-perception. The symptoms in the right disappeared after the correction of an error of refraction. During the enucleation of the left eye, difficulty was experienced in cutting the optic nerve. After extirpation, a piece of steel 1 cm. by 3 mm. was found imbedded in the sclera and optic nerve. Dr. Harlan related a similar experience.

Dr. Hansell detailed the case of a young man shot through the right eye. The X-rays located the shot in the orbit slightly posterior to the

globe. Under expectant treatment the inflammation subsided, and the eye remained quiescent for several weeks. Then symptoms of sympathetic irritation developed, and the injured ball was enucleated. Upon examination the shot was found lodged in the optic nerve. This case seems to substantiate the claims made recently that sympathetic ophthalmia may arise from injury directly to the nerve, and be conveyed by means of the lymph channels of the optic nerve to the tract, and thence to the sound eye. But it must be remembered that in most cases, as in this one, the anterior structures have been seriously damaged, and the origin of the sympathetic involvement may well be the ciliary region, which, it is universally admitted, is the "danger zone."

Dr. Harlan reported a case of *splinter of iron in the eyeball*, with iritis and hypopion, located by the X-rays and removed with the electro-magnet. A machinist was struck in the right eye by chip of iron from a cold chisel, nine days before he presented himself at the Wills' Eye Hospital. Although suffering considerable pain and loss of vision, he had simply bound up the eye and continued his work. He had a small scar near the temporal border of the cornea, in the equator of the ball, iritis with posterior synechia and hypopion, and haziness of the lens preventing a view of the fundus. In the middle of the outer half of the iris, behind the corneal scar, a small bead of lymph seemed to hide a penetrating wound, and streaks of opacity, extending from the temporal to the nasal side of the lens, suggested that a spicula of iron had passed through it and lodged in the fundus. Dr. Leonard, of the University laboratory, reported that a long, narrow splinter of iron was lodged just behind the iris, transfixing the margin of the lens. An incision 5 or 6 mm. long was made through the cicatrix in the cornea, and the large, blunt electrode of a Hirschberg magnet was applied against it externally, when an iron splinter 10 mm. long and 1 m. wide was promptly extracted. Ice was applied for a few days, and the patient left the hospital with the eye nearly quiet and no other disability than a cataractous lens. Attention was called to the fact that the lens and vitreous afford the most favorable field for the removal of foreign bodies by the magnet after the lapse of considerable time, as they do not become involved in dense cicatricial tissue, as when lodged in the choroid. The skiagraph was shown of another case in which a chip of iron was found, after enucleation, imbedded in the choroid near the optic disk, where it had been for three weeks. It was so firmly incased in scar tissue that the magnet had no effect when applied directly, and quite a tedious dissection with the scissors points was necessary to release

it. It is not probable that it could have been dislodged even by a Haab magnet.

Foreign Body in the Lens Located with Röntgen Rays.—Dr. de Schweinitz read the notes of a case of foreign body (a piece of steel) in the lens, which had remained quiescent for nearly 14 months (the lens being partially cataractous), which was accurately located by the X-rays according to Dr. W. M. Sweet's method. When the pupil was widely dilated this piece of steel could be seen in the upper part of the lens, but could not be seen when the pupil had returned to its natural size. In other words the localization with the ophthalmoscope and with the X-rays was identical, and the case was presented as an admirable demonstration of the value of Sweet's method.

Dr. M. W. Zimmerman reported a case of *Linear Rupture of an Ulcerated Cornea, Followed by a Large Intraocular Hemorrhage*, occurring in an eye previously damaged by glaucoma. The loss of corneal tissue involved about one-half its thickness and almost its entire area. No operation had been performed in the tissue that subsequently ulcerated. On the sixth day, while still wearing a pressure bandage, and with no history of direct injury, there was a sudden rupture of the thinned cornea, almost horizontal in direction and about 7 mm. long, through which appeared a large hemorrhage, carrying with it the crystalline lens. Enucleation was necessary, and the specimen demonstrated the above facts. The patient was a healthy working woman, aged 56.

Discussion.—Dr. Wm. F. Norris stated that linear rupture after glaucoma was not very unusual. He had enucleated a glaucomatous eye in which a violent hemorrhage had occurred, and in the examination of the ball could determine no special cause.

Dr. Oliver considered the case of Dr. Zimmerman to be one of the terminal stage of glaucoma. He cited the brief details of a woman who had recently come under his care, in whom the right eye had passed on to such a condition just before his seeing it, while the left, which was saved by prompt local treatment and appropriate general measures from an attack of acute hemorrhage glaucoma, had its vision restored from a small area of light-perception to almost full acuity in a large field, as illustration of the type.

Dr. H. F. Hansell and Dr. Wm. G. Spiller reported two cases of *Unilateral Total Ophthalmoplegia*, crossed hemiplegia being associated with the ocular paralysis in one case.

The first patient described had received a punctured, transverse wound in the lower lid of the right eye from the thrust of an umbrella

ferule, about six months previously. The wound was just above the margin of the floor of the orbit, and when the man was examined shortly after the injury had been received, he was found to have complete ophthalmoplegia of the external and internal muscles of the *right* side, loss of sensation in the distribution of the ophthalmic division of the right fifth nerve, paralysis of the left side of the face and of the *left* extremities. Indications of slight edema of the right optic nerve were present for a short time.

Six months after the beginning of the trouble the muscles of the exterior and interior of the eye and of the left extremities had, to a great extent, regained their normal power.

The complete paralysis of the third, fourth, ophthalmic division of the fifth, and sixth nerve, with the escape of the optic nerve, led the authors to conclude that the injury had been received at the sphenoidal fissure. Associated movements occurring in the paralyzed limbs were referred to and discussed. The transitory exophthalmos was explained by the loss of tonicity in the external muscles of the eyeball. The crossed hemiplegia was believed to be due to a lesion in the upper part of the right side of the pons, or in the right cerebral peduncle, or at the inferior part of the right internal capsule.

The second case was one of injury at the inner third of the supraorbital ridge on the left side. At the time of the examination, several days after the injury, marked depression was noticed at the site of the injury, indicating a fracture of the anterior plate of the frontal sinus. The man had partial loss of vision, diplopia, and total inability to move the eyeball. The area supplied by the supraorbital nerve was anesthetic. Ptosis was not present. The pupil was dilated and immobile, accommodation was lost, and numerous hemorrhages into the retina were found. The loss of sensation in the skin on the left side of the forehead was explained by the injury of the supraorbital nerve, and the total internal and external ophthalmoplegia by orbital hemorrhage and exudation.

HOWARD F. HANSELL,
Clerk of Section.

BATES believes the aqueous extract of the suprarenal gland to be the most powerful astringent in existence. A one per cent solution instilled into the eye, whitened the conjunctiva in from forty seconds to two minutes. Pupils not affected by it. It has no antiseptic or anæsthetic properties. The relief from pain is due to its wonderful astringent properties. It is used in all forms of inflammation of the eye and is distinctly useful.

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE AND THROAT PHYSICIANS.

JANUARY 19, 1898.

The president, Dr. G. E. Brinckerhoff, in the chair.

Gumma of the Conjunctiva.—This case, shown by Dr. Barkan at the December meeting, was again presented by him. Under the use of inunction and 20 grains three times daily of the iodid, the gumma had melted away, and the conjunctiva is normal in appearance, the only evidence remaining being a superficial opacity of the cornea resembling a sclerosis near the original seat of the gumma.

Dr. Pischl mentioned a similar case which he had reported some time ago.

Foreign Body Extractions by the Haab Magnet.—Dr. Barkan presented three patients, from the interior of whose eyes he had extracted foreign bodies with the large Haab magnet, the eyes being saved, with various degrees of vision approaching normal. He had made twelve such extractions, and his experience had led him to abandon the use of the sideroscope of Asmus, owing to the tediousness attendant upon its use. He now relies upon the production of pain on closing the circuit of Haab's magnet as a guide to the existence of a foreign body.

Dr. Pischl believed that pain is only present when the movement of the foreign body causes it to press upon tissue supplied with nerves.

Dr. Eaton briefly described his experiences with the use of a very large magnet which had been made for him four years ago, with which he had saved several eyes by extracting bits of metal. In two cases the closing of the circuit caused no pain, though chips of iron were present. In one of these cases the foreign body was drawn out of the lens through the corneal wound without any sensation of pain.

Epithelioma of the Conjunctiva.—Dr. W. A. Martin presented a man aged 42 with an epithelioma of the conjunctiva the size of a small pea situated 3 mm. to the inner side of the right cornea. It had existed one month. Specific disease could be excluded.

Bezold's Continuous Tone Series.—The complete apparatus as made by Edelmann, and as described by Knapp in *Archives of Opth.*, was exhibited by Dr. Barkan, who also demonstrated the use of *Zeiss' Binocular Corneal Loupe*, the instrument shown being the first one made by Zeiss and at the

request of Dr. Barkan. It is mounted on a stand which also carries a chin rest and has a third tube by which an electric light is directed upon the eye. With these convenient exceptions it is essentially the same apparatus as Dr. Edw. Jackson's.

The Bacillus of Whooping-cough.—Dr. Henry L. Wagner reported a case of persistent cough, in which a bacteriological examination made by him of the nasal secretion showed the bacillus of whooping-cough. A peculiar feature was that the germ is not found on the conjunctiva.

Dr. J. A. Black was elected a member.

The annual election of officers was then held, resulting as follows: President, Dr. W. A. Martin; 1st vice president, Dr. J. H. Philip; 2d vice president, Dr. Kate Overacker; secretary, Dr. R. L. Cox; treasurer, Dr. K. Pischl.

OPHTHALMIC SECTION OF THE AMERICAN MEDICAL ASSOCIATION.

Among the other arrangements affecting this section is a joint session with the Section on Otology and Laryngology that will occupy the whole morning of the second day. The subject for discussion is "The Relation of Ocular Diseases to Affections of the Nose and Neighboring Cavities." It will be introduced in an address by Dr. Charles Stedman Bull, of New York, entitled "Some Points in the Symptomatology, Pathology and Treatment of the Sinuses Adjacent and Accessory to the Orbit," followed by Dr. Bryson Delavan, of New York, on "Nasal Stenoses in the Relation to Ocular Disturbances;" Dr. J. A. White, of Richmond, Va., "Eye Troubles Attributable to Nasopharyngeal and Aural Disturbances," and Dr. J. H. Bryan, of Washington, "Diseases of the Accessory Sinuses in Their Relation to Diseases of the Eye." Three symposia on sympathetic ophthalmia, chronic glaucoma and the diagnosis and treatment of the rarer forms of ametropia have been arranged. For the greater convenience of members who desire to attend sessions of both sections, two commodious adjoining halls have already been secured. A preliminary programme furnishing further details on these and other matters will be published in May.

Anti-Gout Remedies in Glaucoma.—If iridectomy is refused, much benefit can be attained in severe cases of glaucoma by administering piperazin and ordering an anti-gout diet, as a gouty tendency is frequently the basis for the eye affection.—*Opthmol. Klinik*, 1898, 21.

REVIEWS.

The Etiology and Educative Treatment of Convergent Strabismus. By Priestly Smith, M. R. C. S. The Bowman Lecture for 1898. *British Medical Journal*, July 2, 1898. (Reprinted almost entire in the Ophthalmic Record for October, 1898.

When and Why Shall We Operate in Insufficiencies of the Ocular Muscles? By Alexander Duane, M. D., *New York Medical Journal*, June 4, 1898.

It is apparent that the study of those abormal conditions of the eye dependent upon disturbances of its motility are attracting more and more attention. It is, moreover, becoming more and more evident that the subject is a most extensive one; that it is beset with difficulties in many respects far greater than those connected with the subjects of refraction and accommodation, and yet that none can afford to neglect the practical application of the principles founded upon facts discovered by careful and accurate observers of the functions of the oculo-motor apparatus in health and disease. The relative importance of the various aberrations of motility as estimated by different observers deserves notice. This appears to be the result of an imperfect understanding and difference in opinion as to what constitutes the physiological standard of ocular motility, and still more to be the result of a failure to compare and rightly estimate the departures from this normal. Thus convergent strabismus is perhaps still viewed too much as if it were an independent entity — a purely muscular anomaly.

Mr. Priestly Smith in his summary of the etiology and course of convergent strabismus emphasizes another factor when he defines it as "a disorder of innervation in which the visual centers fail to control the act of convergence," and though he goes on to state that "the failure of control depends largely on faulty development of the visual apparatus," in no part of his lecture, while describing the etiology in detail, does he mention the influence of vertical tensions and deviations in producing lateral strabismus, though proved by Stevens ten years ago, and frequently met with and reported by others since.

It is too often forgotten that *all* deviations are, properly speaking, strabismic, varying only in extent, not in nature. Accordingly what were formerly termed latent deviations, the heterophorias of to-day, are called by Duane superable squint, and by Maddox suppressed squint.

Duane, in describing the different varieties of muscular over-action and under-action, has pointed out that, while the abnormality may affect "either the muscle itself, its tendon, or the nerve nucleus supplying it, it cannot be too strongly insisted upon that these three varieties, however dissimilar in origin, show in their symptoms and objective signs no real point of difference." Thus the convergent strabismus resulting from over-action of an inferior rectus and consequent hyperphoria from subduction (Maddox) differs not a whit in its symptoms and objective signs from one resulting from interruption of the action of the higher centers which control the movements of the eyes as so admirably described by Mr. Priestly Smith.

Most valuable is his presentation of his subject, and his unequivocal support of the educative principles so long advocated by Javal will be an incentive to others to make use of them. It will be well to lay to heart his warning that "the old idea that the squinting child needs a little skillful cutting and nothing more, is dying out." We may justly go even farther than this and say that the day has come when continuous convergent strabismus can generally be prevented in many cases by the early detection and correction of latent deviations, i. e., superable, suppressed squint, and that it is often as important to the child to detect these conditions as to discover the existence of hyperopia and astigmatism.

As much skepticism and prejudice still exists as regards the wisdom of the operative treatment of heterophoria, the well-balanced paper of Dr. Duane, moderate yet firm, simple and sane and unmarred by extreme statements, is most opportune. He refutes on the evidence of his own work the various objections brought against such operations, showing that the conditions for which they are done are neither rare nor inconstant, and the relief resulting from operation is neither uncertain nor temporary, but generally sure and permanent.

But such success necessitates that the muscle at fault be found, and its innocent fellows spared. "Care must be taken not to tenotomize an inferior rectus when hyperphoria is due to insufficiency of an elevator, or tenotomize a superior rectus when there is insufficiency of a depressor. . . . We must not rest satisfied with the statement that our patient has so many degrees of esophoria or hyperphoria, but must find out what is the cause of the esophoria or hyperphoria—e.g., whether it is due to

insufficiency or overaction of one of the associated movements of the eyes, or two or more conditions combined. If we are dealing with an esophoria or convergent deviation, we shall treat it in one way if the esophoria means deficient divergence or insufficiency of one or both externi, and in quite a different way if it means either excessive convergence, *per se*, or excessive action of both interni."

It is to the unfortunate results of treating symptoms instead of causes that much of the prejudice against and opposition to operations on the ocular muscles must be attributed; it is as irrational to expect to succeed in thus removing a muscular anomaly and its results, as to expect to cure accommodative asthenopia without estimating the actual condition of refraction. F. B. Eaton.

"The Effect of the Extrinsic Poisons on the Eye."—Looking over some files of the *Journal of the American Medical Association* recently, my attention was attracted to a very able article by J. Herbert Claiborne, M.D.

This subject is particularly interesting to me at this time, because of the unusual number of cases of toxic amblyopia I have encountered within the last few months, and I trust a brief review may not prove uninteresting to others.

"By the term toxic amblyopia," says Dr. Claiborne, "I understand an interference in vision produced by certain drugs or substances that have been absorbed by the human system." And he proceeds, after Dr. Wood, to divide them into two great classes: Those directly affecting the optic nerve, and that other class whose symptoms are unattended with nerve lesions. Under the former class he makes distinctions: "(a) those that produce a retrobulbar neuritis: among these tobacco, alcohol, tobacco-alcohol, carbon bisulphid, hasheesh, iodoform and arsenic are chief; (b) those that produce other forms of optic nerve and retinal disease, such as lead, quinine, salicylic acid or the salicylate of sodium, venom of poisonous reptiles, silver, mercury, ergot, nitrite of amyl, the oxide of nitrogen gas, malefern and pomegranate."

Of these classes my experience has been chiefly with the lesions and symptoms caused by the tobacco, tobacco-alcohol, alcohol and quinine absorption; and so far as I have been able to determine, these are the exciting causes in a vast majority of cases.

I concur with Dr. Claiborne that while amblyopia occurs most frequently from combined toxic doses of alcohol and tobacco, setting up retrobulbar optic neuritis, it also not uncommonly happens as the result of

either. I am of the opinion, too, that it is highly improbable that dilute alcoholic drinks moderately and irregularly taken produce any perceptible disturbance of the functions of the vision; and equally of the belief that it is the frequent or regular "tipler" of the stronger liquors who is most susceptible to amblyopia rather than the so-called "spreer." Of course, as in all other similar cases, individual idiosyncrasy plays an important part, whereas on the other hand alcohol and tobacco may have been habitually taken to excess through a long life without producing any symptoms of the disturbance; on the other, marked signs of the disease may appear after relatively brief indulgence. I knew a man who lived to the ripe old age of ninety-two, who assured me that for the last forty years of his life, he had daily drank one pint of whisky. He had cataract, but there was no optic nerve trouble. On the other hand, I have known quite young men to suffer serious diminution of vision, after a short indulgence in stimulants. It is significant, however, that amblyopia due either to alcohol or tobacco, or to their combined toxic effects, rarely occurs under the age of forty, while most often between the ages of forty and fifty.

Of amblyopics there is naturally great disparity between the sexes. Habit, custom and association doubtless account for this in large measure. For *cæteris paribus*, it is scarcely probable there would be any appreciable difference in results. With the possible exception of bartenders, occupation seems to have little to do with predisposition to the disease. The amount, strength, frequency of ingestion seem much more potent in effect. Nor is it practicable to discern differences between signs and symptoms of amblyopia caused in one case by alcohol, in another by tobacco. There can be no doubt, however, that tobacco alone can and does produce grave loss of vision. Even the use of snuff has been known to cause marked amblyopia. It is not uncommon to meet the "cigarette fiend" with a steadily increasing diminution of sight.

One of the earliest symptoms to be noticed, perhaps, is the patient's complaint of mistiness affecting both eyes, or a request for a stronger pair of glasses. A distinctly characteristic symptom, though not always marked at the beginning, is central color scotoma. As a rule the ophthalmoscope will early show congestion of the optic nerve. As the neuritis progresses, the optic nerve grows pallid as the fibers approach the macula lutea. This area sometimes is of triangular shape.

"It is a question whether this form of optic neuritis alone ever goes on to complete blindness. It is always well to look to syphilis as a complication, since tobacco, alcohol and syphilis are a frequent trigeminal

combination. Recovery is apt to occur only when the disease is recognized in its incipiency, and the patient has the character to jugulate the habit."

Dr. Claiborne goes on to discuss amblyopia caused by carbon bisulphid, hasheesh, iodoform and arsenic in a very interesting manner, but I will pass on to his treatment of quinine amaurosis.

"In referring to the toxic effect of this drug (quinine) on the vision, we always use the word amaurosis and not amblyopia, because it produces blindness.

"Giacomini reported the first case. The amount necessary to produce amaurosis varies greatly. I myself have cited a case in which fifteen grains produced total blindness, lasting a number of hours, and it is recorded by Vorhees that one person took thirteen hundred grains before blindness set in. I also reported a case in the OPHTHALMIC RECORD, of a 13-year old girl who went blind after taking 2½ ounces. I am inclined to believe that idiosyncrasy is a factor when small doses produce blindness, and that any one may become blind from excessive use of the drug.

"Dr. Knapp in 1881 thus describes the signs and symptoms of quinine amaurosis: 'Marked pallor, general weakness, twitching of the mouth and extremities, total blindness and deafness associated with loud tinnitus aurium. The pupils are widely dilated and do not react to light, but do to accommodation. The patient often loses consciousness to a greater or less degree. The ophthalmoscope shows an absolute anæmia of the optic nerve and retina. The papilla is chalky white and no trace of blood vessel in that or the retina is to be seen. This state of things is seen in every case.'

"I hope I will be pardoned for presenting the conclusions I drew in 1894 from a study of the subject:

1. Quinine in toxic doses may produce blindness.
2. The dose is distinctly indeterminate.
3. The duration of the amaurosis varies largely.
4. The field of vision remains contracted.
5. Central vision usually returns.
6. There is color blindness at first; the color perception is ultimately within the central field.
7. The ophthalmoscopic picture is that of white atrophy.
8. Experiments on dogs show that there is atrophy of the entire optic tract.
9. The same experiments show that the cells of the cuneus are probably not affected."

For lack of space I will not dwell on class 2; the same reason forbids careful consideration of the rarer causes of amblyopia. I think it well to close by giving some of Dr. Claiborne's general conclusions:

"1. There are certain poisons, which, when introduced into the human system, produce characteristic toxic symptoms in the eye.

2. These poisons are divided into two grand divisions: (a) those that produce organic changes in the optic nerve and retina: (b), those that produce no organic change in the optic nerve and retina, in short, those whose effect on the eye is a functional one.

3. The majority of these poisons are found in the list of medicinal remedies.

4. In view of these facts it is obviously important that practitioners of medicine should be intimately acquainted with the toxic effect of these poisons on the eye."

With these conclusions I cannot do other than agree.

—A. W. Calhoun.

Shot Wounds of the Eye.—Professor Tornatola reaffirms the benefits to be derived from a conservative treatment of wounds while hunting. The shot is always asceptic after the explosion, and the lead does not *per-se* irritate the tissues. The danger to be apprehended is secondary infection from without, as he demonstrates by a number of convincing instances. He therefore reduces this danger to the minimum by suturing, the tiny hole where the shot enters, after excision in the shape of a small, long ellipse. The wound heals in two or three days, and thus shortens the danger period materially.—*Revue Gen. d'Ophth.*, December 31, 1898.

The Blind in Russia.—Of 302,000 totally blind persons in Europe, not less than 192,000 are in Russia, or a proportion of 1 to 500 of the population. France, England, Germany, Italy and Spain have a better showing, that of a little less than 1 out of every 1,000. The Russian statisticians, and in this case competent physicians, attribute this plight of the inhabitants to the bad hygienic state of peasant life, to the intense cold and to the glare of the sun on the snow. To these causes might possibly be added the minute foreign bodies carried by high winds.—*Journal of the American Medical Association.*

NEWS ITEMS.

Personals and items of interest should be sent to Dr. Frank Allport, 92 State St., Chicago.

Dr. J. G. Huizinga has been appointed Ophthalmologist to Halsted street dispensary, Chicago.

At a recent meeting of the Philadelphia Medical Club Dr. George E. de Schweinitz was elected vice-president.

Dr. Horace M. Starkey, of Chicago, has accepted a professorship in Ophthalmology in the Chicago Eye, Ear, Nose and Throat College.

Dr. L. Webster Fox delivered a lecture on "Diseases of the Eye" before the Mid-Winter Meeting of the Bucks County Medical Society.

At the last meeting of the staff of the Cook County Hospital, of Chicago, Ill., Dr. Allen T. Haight was elected Ophthalmologist to the institution.

Dr. Aaron Schloss of Stockton, Cal., has been appointed adjunct professor to the chair of the Sciences of Eye, Ear, Throat and Nose in the College of Physicians and Surgeons, San Francisco.

Professor Julian J. Chisholm of Philadelphia, retired from active practice eight months ago. He will hereafter divide his time between Charleston, Baltimore and some northern health resort.

A very useful and readable little work is the new book on "Ocular Therapeutics," by Dr. Ohleman of Minden, Germany, which is translated and edited by Dr. Charles A. Oliver of Philadelphia. It is full of practical material and is published by P. Blakiston's Son's & Co.

Dr. Frank Van Fleet of New York, has been elected chairman of the legislative committee of the New York State Medical Society. We trust this means that some good legislation will be enacted relative to restraining opticians from indulging in the practice of ophthalmology.

Dr. George H. Stubbs, Oculist and Aurist to the Southern Railway, The Alabama Great Southern Railway, the Hillman Hospital, etc., at Birmingham, Ala., will spend the months of February and March among the larger hospitals and clinics in Philadelphia, Baltimore and New York.

This month (March) the fourth volume of Norris and Oliver's "*System of Diseases of the Eye*," will be distributed, and will be welcomed by all ophthalmological workers. This is unquestionably the most important work on diseases of the eye in the English language, and should be in the library of every ophthalmologist.

Dr. H. V. Würdemann, of Milwaukee, who has been associate editor of the *Annals of Ophthalmology*, in charge of the German literature, has accepted the position of editor-in-chief, vice Dr. Casey A. Wood, of Chicago, resigned. Dr. Wood will retain an interest in the *Annals* and will remain in charge of Italian ophthalmic literature.

At a recent election of the "Presbyterian Eye, Ear and Throat Charity Hospital" of Baltimore, Dr. T. L. Savin, Dr. A. L. Bossyns and Dr. J. Frank Crouch were appointed assistant surgeons. Dr. J. F. Jones, Charles G. Buck, H. Hardcastle, J. L. Spruill, R. H. Johnston, C. H. Teenken, were added to the medical staff, and Dr. G. B. Crawford was appointed to succeed Dr. T. L. Savin as resident physician.

At the fourth annual meeting of the Western Ophthalmologic and Oto-Laryngologic Association, held in New Orleans, February 10th and 11th, the following officers were elected:

President, W. Scheppegrell, New Orleans; 1st vice-president, M. A. Goldstein, St. Louis; 2nd vice-president, H. V. Würdemann, Milwaukee, Wis.; 3d vice-president, E. C. Ellett, Memphis, Tenn.; secretary, Fayette C. Ewing, St. Louis; treasurer, W. L. Dayton, Lincoln, Neb.

The next meeting will be held in St. Louis in April, 1900.

We are in receipt of a letter from Dr. de Schweinitz of Philadelphia, who says that the statement made in a recent issue of the Ophthalmic Record concerning his appointment as "Emeritus Professor of Ophthalmology" in the "Philadelphia Policlinic," is incorrect. An Emeritus chair was offered him, but he declined it. Dr. de Schweinitz was, however, appointed "Consulting Ophthalmologist to the Policlinic Hos-

pital," and we certainly congratulate the "Policlinic" in having a connection of any kind whatsoever with our distinguished co-laborer in Philadelphia.

The new *Zeitschrift für Augenheilkunde* made its first appearance in January, 1899. It is published by S. Karger in Berlin, and costs thirty marks a year. It is edited by Prof. Kuhnt, of Konigsburg, and Prof. V. Michel, of Würzburg, assisted by the following well-known and able corps of collaborators: Cirincione, V. Ewetzki, V. Grosz, Gruber, Kamocki, Koster, Widmark, Bach, Ozermak, Dimmer, Haab, Mellinger, Pagenstecker, Peters, Raehlmann, Schmidt-Rimpler, Silex, Uhthoff, Vossius and Wilbrand. With names like these the new enterprise must be successful from the very start.

A new medical journal is being published in St. Paul, called the *St. Paul Medical Journal.* Dr. Burnside Foster is the editor-in-chief, and the journal is published under the auspices of the Ramsey County Medical Society. Its first number is extremely creditable, and if it retains its present excellence it is destined to be one of the important medical journals of this country. Among the ophthalmologists who assist in its publication are Drs. Edward Boeckmann, J. F. Fulton, Cornelius Williams and T. McDavitt of St. Paul, and H. E. Holmes of Minneapolis. We wish the new journal prosperity.

In an investigation as to the vision of the children in the Rochdale Parish Church School, Menzies first tested each eye in each child by means of Snellen's types and trial lenses, and then examined with the ophthalmoscope and retinoscope those whose vision was subnormal. He found 165 cases of hypermetropia in 66 boys and 99 girls; 40 cases of astigmatism in 29 boys and 11 girls; 16 cases of myopia in 9 boys and 7 girls. Included in this table are thirteen cases of nebula or other opacity of the cornea. In these cases the refraction was ascertained by retinoscopy.—*Philadelphia Medical Journal.*

At the annual meeting of the Episcopal Eye, Ear and Throat Hospital, of Washington, D. C., the following were elected Trustees of the institution:

Drs. W. H. Wilmer, C. H. Alden, F. P. Austin, Robert S. Chew, H. T. Frey, R. B. Mason and H. B. Noble.

One thousand two hundred and seventy-nine patients were treated

the past year, 6,237 calls made, 173 patients admitted to the house, 225 operations performed, of which 155 were eye operations.

The receipts were $5,000, and the expenses nearly the same.

We quote a part of the London letter to the *New York Medical Record:*

"Do you know anything of the 'Philadelphia Optical College,' which 'examines in absentia and grants the degree of Doctor of Refraction?' At least a Yorkshire chemist announces that he has obtained such a diploma, testifying that he is 'entitled to the highest honors the college can bestow.' He survives, however, the weight thus laid upon him. I wonder whether this is an instance of the proverbial Yorkshire sharpness or a skit on the Spectacle-makers Company, which has lately enrolled over two hundred fellows."

The staff of the *Annals of Ophthalmology* will shortly be enlarged by the appointment of six collaborators. Abstracts of Dutch, Russian, Scandinavian, Polish and Grecian literature will be hereafter included. With these, the abstract departments of the journal will cover the ophthalmic literature of all the world. Book reviews and abstracts of foreign literature have generally appeared in the *Annals* several months in advance of other publications, even of journals of foreign countries, where the originals were published. The abstract departments are a very valuable feature of the *Annals*, as references to all the up-to-date literature are here collected. Hereafter only original papers of first importance or of the most exhaustive type will be accepted for publication in the *Annals of Ophthalmology*.

At last the long promised "American Text Book of *Diseases of the Eye, Ear, Nose and Throat*," by de Schweinitz and Randall, is out, and like many other good things, it is well worth waiting for. It is published by Saunders of Philadelphia, contains 766 engravings, 59 of them in colors, is well indexed, beautifully produced with good paper and print, and is unquestionably the best thing of the kind in the English language. It is not only a valuable book for the general practitioner, and for the specialists, but for the medical student as well, who will find in one book of 1,250 pages, the latest information on the eye, ear, nose and throat. By purchasing this one book, the student will avoid the necessity for buying three books, which will, of course, be a distinct economy in the end.

The New York State Medical Society, which convened in the city of Albany January 31st to February 2d, inclusive, was a very interesting and profitable meeting. Among the many valuable papers that were presented, four were of special interest to the ophthalmologists.

A paper by Dr. St. John Roosa, on the New Operation for Strabismus, devised by Panas. One on Glioma, by Dr. Herman Knapp, and one by Dr. Henry D. Noyes, on Operations upon Secondary Cataract, and the presentation of a new discission knife, devised by the author.

The last, but by no ways the least in importance and interest, was a paper by Dr. Lucien Howe, entitled, "An Additional Reason for Requiring in Almshouses Measures for the Prevention of Purulent Ophthalmia in Infancy."

A book that will command considerable attention has recently been written by William A. McKeown, M.D., Belfast, Ireland, entitled "A Treatise on Unripe Cataracts." Dr. McKeown is a well-known ophthalmic surgeon of high repute, and surgeon of the Ulster Eye, Ear and Throat Hospital, Belfast, otherwise this book might not command the attention which it is sure to receive. He believes that immature cataracts may be successfully and safely removed by the use of intra-capsular injections and intra-ocular irrigations. He substantiated his assertions by a recitation of 700 cases which have been treated in this manner during the past fourteen years. If Dr. McKeown's predictions are true, it will certainly be one of the sensational episodes in the history of ophthalmology.

The Ninth International Congress of Ophthalmology will be held at Utrecht, August 14, 1899.

Professor Snellen reports that he anticipates a large attendance, and he desires those intending to be present to inform him as to whether they desire to read papers, and whether ladies will be in their party, and which language they prefer for discussion.

There will be three sections. First—Anatomy, Pathological Anatomy and Bacteriology. Second—Optics and Physiology. Third—Clinical and Operative Methods.

The official languages will be English, French and German. The membership fee will be twenty-five francs.

The Executive Committee consists of Argyll Robertson, George A. Berry, M. E. Muller, M. Straub, W. Koster and H. Snellen.

Effects of the Arc on Eyes.—The report of Tracinski, in the *Zeitschrift für Beleuchtungswesen* (April 30), gives the results of investigations in connection with the operation of the Zerener welding process, which is now coming into use quite largely. The operator wears a pair of spectacles of dark, smoked glass, besides which he looks through a pane of deep red glass, which is connected with the apparatus. The action of the light is sufficiently reduced by this means, says the *Progressive Age*. He tried using the red glass alone, but it affected his eyes for some time after. The workmen who are using this apparatus at first experience pain in the eyes at night, but later on this disappears; the sight, however, is not affected. He concludes that no permanent ill effects are produced if proper precautions be taken, and if the operator become gradually accustomed to the work. It is a mistake to have a new operator work a whole day with the arc, as he should begin with a few hours a day until the eyes have been accustomed to it. Only those who have healthy normal eyes should attempt this work.—*Scientific American.*

Eyesight of Railroad Employes.—Dr. Ricchi of Florence stated at the Brussels International Congress, 1897, that the Italian railroads require of their employes both eyes normal in regard to visual acuity, ocular refraction, perception of red and green and visual field. They are re-examined when they are forty-five years of age, when they have been injured or affected with a serious cerebral or infective disease, when they are addicted to the use of tobacco or liquor, or merely suspected of diminished visual faculty. The Monoyer scale, Donders' and Holmgrem's are the tests used. Nuel advocates re-examination every five years and after every accident, including all the employes on the train and those responsible for that portion of the track. Bickerton remarked that the eyes of candidates for the British navy are not tested until they have been in the service for some years, and then not by a medical man. Beaumont added that the standard exacted by the English railroads of their employes is only one-quarter of the normal eyesight in the better eye. Parliament is powerless to interfere, as eighty members of the House of Commons are directors of railroads and oppose any reform on account of the expense.—*Rev. Gen. d'Ophthal.*, November 30.

The Retina in a Case of Partial Macropsia.—Professor Holmgren published a couple of years ago (*Nordiskt Med. Ark.*) a study of his own right eye, which was affected with relative scotoma, partial blindness

and macropsia for objects projecting an image over .75 mm. on the retina, which were seen two and a half times larger than with the other eye. He explained this macropsia by assuming that the cones had learned to see objects in their natural size, but that they became compressed at some given moment, and two and a half times as many cones were crowded into the normal space, causing them to see objects two and a half times as large as normally. He added that he had bequeathed his eye to the professor of histology for examination. After his death the eye was duly examined, but as twenty-four hours had elapsed it was difficult to distinguish between lesions and cadaveric changes. The full report is published in the *Upsala Läkare Forh.*, July 4, 1898. It can be summarized as the discovery of hemorrhagic cysts and a number of small recent hemorrhages. Around these cysts the elements of the retina presented no pathologic alterations, but seemed to be compressed and bent out of their natural position. There was also in the choroid a membrane of vascularized conjunctiva tissue.—*Rev. Gen. d'Ophth.*, December 31, 1898.

The Massachusetts Charitable Eye and Ear Infirmary is expected to occupy its new building this year. The superintendent, Dr. Frank Cobb, has had practical supervision of all the construction and arrangement and has given a vast amount of thought to every detail. This building is in every way a model of its kind. No pains have been spared to make it complete and up-to-date in every particular. It is a large four-story, L-shaped building, with a well-lighted basement, facing on Charles and Fruit streets, adjoining the grounds of the Massachusetts General Hospital. Behind it is a small separate building for ophthalmia patients, connected with the main building by a passage way, parallel to this and shut off from the main building by a large sterilizing apparatus, through which all soiled clothes used in the ophthalmia ward must pass before going into the general laundry on the other side. In one basement room is to be a large plant for making ice. This is found to be considerably more economical than buying it. The first floor is occupied by the out-patient department, one wing being devoted to eye and the other to ear patients. There is a separate entrance to the hospital wards on the floors above. The walls of the operating rooms are plastered with Keene cement. This is smooth, hard, nonporous, and better than marble, because there are no joints. This is probably the most perfectly appointed eye and ear hospital in this country.—*St. Paul Medical Journal.*

Section on Ophthalmology; American Medical Association.—Dr. Edmond Landolt, of Paris, the well-known ophthalmologist and author, has accepted the invitation of the Section on Ophthalmology to give an address before that body in Columbus next June. Dr. Landolt has chosen the title, "Some Disturbances of the Ocular Movements."

In addition to their regular programs, the Section on Ophthalmology and that of Laryngology and Otology, will devote the morning of the second day, June 7th, to a joint meeting, under the Chairmanship of Dr. Casey A. Wood, of Chicago, and of Dr. Emil Mayer, of New York.

The subject for discussion will be, "The Relation of Ocular Diseases to Affections of the Nose and Neighboring Cavities."

Four papers are to be read on this subject, *by invitation*, as follows:

1. Dr. Charles Stedman Bull, of New York, on "Some Points in the Symptomatology, Pathology and Treatment of the Sinuses Adjacent and Accessory to the Orbit."

2. Dr. Bryson Delavan, of New York, on "Nasal Stenoses in Their Relation to Ocular Disturbances."

3. Dr. Joseph A. White, of Richmond, Va., on "Eye Troubles Attributable to Naso-pharyngeal and Aural Disturbances."

4. Dr. J. H. Bryan, of Washington, D. C., on "Diseases of the Accessory Sinuses in Their Relation to Diseases of the Eye."

5. General Discussion on the Main Question.

To speak of a color-blind artist sounds like joking, said a noted London oculist, but, strange as it seems, there are several persons so affected who nevertheless paint extremely well. Numbers of color-blind people there are, of course, who draw perfectly in pencil, ink and crayons, but I myself know a scene painter attached to a provincial theater who, though "color blind," paints all its scenery, and has quite a local name, not only for his "interiors" and oak chambers, but even for landscapes. I can tell you also of two London ladies who consulted me for color blindness who paint really beautiful pictures. One is a daughter of a late famous artist, and was taught painting by her father. She is quite unable to distinguish red from green, but her colors are labeled with the names and she has been taught which to use for certain effects. Possibly her painting may seem to her eyes, as it were, drawing with a brush and "shading" with the colors. The other is a lady artist of some celebrity who has for years exhibited annually in London. The public is not aware that she is color blind. She painted "The Wedding Group" for a certain noble

bridegroom a year or two ago, and also several public men's portraits, and one of an eminent physician fetched 500 guineas. There is a gentleman residing at Kensington who, having years ago left the navy through finding his advancement hopelessly debarred by his color blindness, is at present making several hundred a year by his brush as an artist, designing most artistic and brightly colored picture "posters" for advertisement boards.

New Anesthetics.—Our foreign exchanges contain very favorable reports of the reception of the new anesthetics, orthoform, "orthoform neu" and nirvanin. The dentists are especially enthusiastic. One mentions that he extracted twenty-two teeth with nirvanin at one sitting (*vide* Journal, p. 311). Bardet combines ethyl chlorid with two to four per cent cocain or eucain and applies it as a spray or tampon, thus avoiding the prick of the syringe. It is especially effective for application on the mucous membranes, gums, anus, etc. The tests with it are described in the *Presse Méd.* of January 24.—*Journal Am. Med. Assn.*

Sodium Chlorid for Detachment of Retina.—Lodato asserts that subconjunctival injections of sodium chlorid produce more or less remarkable improvement, amounting to a complete cure in some cases, in recent detachment of the retina. The improvement is marked even after the first injection, or possibly the second or third. If two or three injections are not effective, it is best to desist. These injections are useful in myopic or traumatic detachment, but not if there is much disturbance in the vitreous body. There is very slight, if any, pain and no inconvenience.—*Rev. Gen. d'Oph.*, December 31, 1898.

From recent articles in *Nouv. Remèdes*, the opinion is distinctly gathered that protargol is destined to have a permanent place in ophthalmological therapeutics. The authors claim that it has all of the antiseptic power of nitrate of silver and argentamin without being dangerous to the eye from the caustic effects of the latter. In all forms of conjunctivitis protargol is enthusiastically recommended with the one possible exception of trachoma, where argentamin is thought to be an improvement from its more energetic action. The authors especially recommend protargol in from 5 to 10 per cent solutions as an injection in dacryocystitis.

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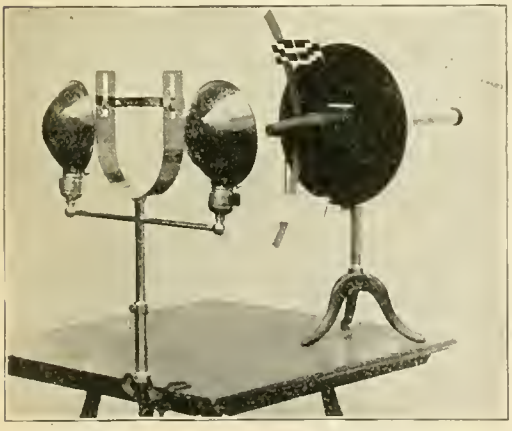

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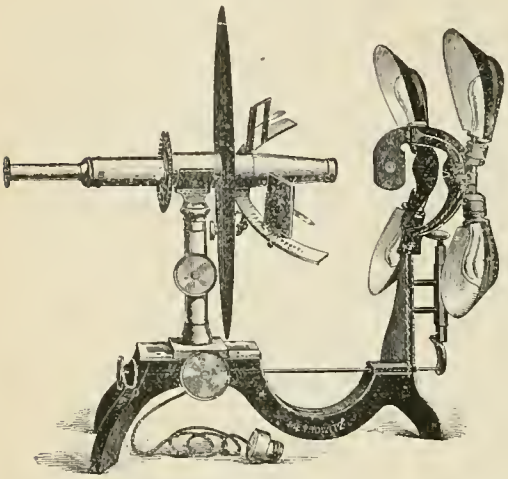

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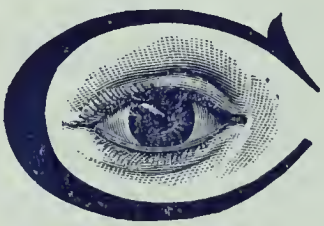
TRADE  MARK

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